INSTRUCTOR INST BUOKTOB Young Man's Best Companion. CONTAINING. Spelling, Reading, Writing, and Arithmetick, in an easier Way than any yet published; and how to qualify any Person for Business, without the Help of a Master. Instructions to write Variety of Hands, with Copies both in Profe and Verse. How to write Letters on Bufmess or Friendship. Forms of Indentures, Bonds, Bills of Sale, Receipts, Wills, Leafes, Releafes, &c. Also Merchants Accompts, and a short and easy Method of Shop and Book-keeping; with a Description of the Product, Counties and Market-Towns in England and Wales; with a List of FAIRS according to the New Stile. Together with the METHOD of measuring Carpenters joiners, Sawyers, Bricklayers, Plasterers, Plumbers, Mafons, Glaffers. and Painters Work. How to undertake each Work, and at wha

Sliding-Rule.

Likewise the PRATICAL GAUGER made Easy; the Arts of Dialling, and how to erect and fix Dials; with Instructions for Dying, Colouring, and making Colours; and some General Observations

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for Gardening every Month in the Year. To which is added,

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A COMPENDIUM of the Sciences of GEOGRAPHY and ASTRONOMY;

A brief Description of the different Parts of the Earth, and a Survey of the CELESTIAL BODIES.

Also some useful INTEREST-TABLES.

By GEORGE FISHER, Accomptant.
The Seventement Edition Corrected and Improved.

H.WOODFALL, J. FULLER, R. BALDWIN, W. JOHNSTON, S. CROWDER and Co. B. LAW and Co. and C. WARB. M.DCC.LXIII.

Price 21. 64.

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PREFACE.



Need Say but little by way of Preface, in relation to the Usefulness of this Book, the Title Page so fully declaring its Contents : But as a Preface is usually expected, I cannot well avoid faying fomething with

respect to its Utility.

As to the first Step of forming the young Man's Mind for Business, viz. The being instructed in, and acquainted with our Mother Tongue, viz. English, it muft be and is acknowledged by all, to be a necessary and principal Qualification in Business, and therefore it is of great Importance to be well acquainted therewith.

In the next Place, to write a good, fair, free, and commendable Hand, is equally necessary in most, if not in all the Affairs of Life, and Occurrences of Rufiness.

The Young Man is, next, informed how to indite Epistles or Letters in a familiar Stiles and on Sundry Subjects and Occasions: With Directions bow to Subscribe or conclude a Letter, and also to superscribe or direct Letters, according to the different Ranks and Qualities of the Persons to whom directed a And this must be allowed to be a very great additional Qualifica tion.

The next Accomplishment for a young Man, and largely treated on in this Book, is that excellent Science of Arithmetic, both Vulgar and Decimal: Leading him by the Hand, and by easy Steps, through its whole

Courfe.

Again, the young Man is next shewn the ingenious Art of Book-keeping after the Italian Manner, by way of Double Entry; and that is an Accomplishment that capacitates him for Business in the highest Degree: Under which Head, he is also informed how to draw out, or make various sorts of Accompts or Writings relating to Mercantile Affairs; as Bills of Lading, Invoices, Accompts of Sales, together with Authentick Examples of Bills of Exchange, with Notes concerning them; likewise Bills of Parcels of divers Kinds; also various sorts of Receipts, &c. All which is expedient for a young Man to know and understand, if he would be dextrous in Business.

The young Man is here also instructed in relation to the Affairs of Business at the Water-side, as to Shipping

off and Landing Goods, &c.

He bath also a Description of England and Wales, each County being particularly spoken of, with respect to its Product, Soil, and Extent, and likewise the Names of its several Market-Towns: and a List of the Fairs now held in them, as they have been settled since the Alteration of the Stile.

Here are also easy, plain, and likewise curious Directions for Measuring all sorts of Planes and Solids (Arithmetically and Instrumentally) as the Works of Carpenters, Joiners, Sawyers, Bricklayers, Masons, Plasterers, Painters, Glasters, &c. with the Prices of

their Works.

Here is likewise shown the Methods of extracting the Square and Cube Roots, with some of their Uses, in relation to Measuring, &c.

Also Practical Gauging of divers Kinds of Vessels, Tuns, &c. Likewise Dialling in various kinds, with

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the Representation of Several forts of Dials, and bow to beautify and adorn them.

Next are Precedents of Law-Writings, as Bonds,

Bills, Indentures, Wills, Letters of Attorney, &c.

Lastly, some Directions relating to the pleasant and delightful Art of Gardening, with general Observations for every Month in the Year. To which are subjoined, Some Instructions to young Women how to Pickle and Preserve all Kinds of Fruits and Flowers, &c. with Instructions for making divers forts of Wines of English Growth; and also for preparing many excellent Medicines, Plasters, &c. with several good Prescriptions of proper Ufe, against most Distempers: Fit for, and necessary in all Families.

To the whole is now added a compendious System of Geography and Astronomy: The first is of great Utility to the trading Part of Mankind, and to these who would bave an adequate Idea of what they read, in History, or otherwise, of the Transactions in different Parts of the Earth: and the second is of like Service to those who would contemplate the heavenly Bodies, and is purposely designed, to give the unexperienced Reader some small Idea of the almost inconceivable Number of Bodies (most of them, much superior in Magnitude to our World, as we vainly term it) which the almighty and infinite Creator hath placed in the Universe, and exhibited to the View and Conception of Mankind.

Also concise Tables to find the Value of Portugal Pieces; to buy or fell by the Great Hundred; and to shew the Interest of any Sum at 3, 4, and 5 per Cent.

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INSTRUCTIONS

FOR

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TO SPELL, READ, and WRITE

TRUE ENGLISH.

The Use of Letters; which are Vowels and which Con-sonants; what Diphthongs are, their Number, and how pronounced and written.



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> HE Defign of this Book being to instruct Mankind, especially those who are young, in the Methods of converling, and transacting necessary Accomplishment of Spelling and

Writing good and proper English, claims the first Notice; for let a Person write ever so good a Hand, yet if he be defective in Spelling, he will be ridiculed and contemptibly smiled at, because his writing fair will render his orthographical Faults the more conspicuous. Therefore,

First, Take notice, that of Letters are made Syllables. of Syllables Words, and of Words Sentences, &c:

The Letters are in Number 26; viz. a, b, c, d, e, f, g, k, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, and z; of these, j and were formerly wrote i and u; and have for that Reason been frequently called i Consonant and a Cononant; but they have been, of late, more properly called a and ve. In these Letters, we are to observe their Names, heir Form, and their Force: Their Names, whereby to know them; their Form, whether great or small; and their force, in Pronunciation or Utterance.

Letters

Letters are diftinguished, according to their Sound, into Vowels and Confonants: A Forwel is a Letter that founder by irfelf, and they be fix in Number, viz. a, e, i, o, a, and y the Greek Vowel; which also is an English Vowel, when it cometh after a Confonant, and hath the Sound of i; as in by, fly, reply, Syllable, &c. but is never used, in Words not derived from a foreign Language, otherwise than at their End. A Confonant is a Letter that foundeth not, except it be joined with a Vowel, for without one of the Vowels no Syllable can be made; as b, c, d, &c. without the Aid of a Vowel, cannot be founded. Though we have 26 Letters, and 6 of 'em Vequels, yet we have 21 Confonants: for y, when let before any Vowel in the same Syllable, becomes a Consonant; as in youth, yonder, beyond, &c. Note, That i hath the Sound of g, as in join, jangle, jingh, &c.

When two Vowels come or meet together in a Syllable, and are not parted in the Pronunciation, but united in one Sound, fuch are called Diphthongs; of these there are 13 viz. ai, ei, oi, ui, au, eu, ou, ee, oo, ea, eo, oa, and ie; as i maid, faith, either, join, aul, eunuch, flout, feed, feed, fool, brood, stealth, wealth, people, seeple, boat, goat, beat, beat, feat, friend, field, &c. Note, That in the first 7 Words both Vowels are founded; but in the other 15, one of them is scarcely heard.

There are also those that are called Tripbthongs, when three Vowels meet in one Sound; as in Beauty, Beau, Lin and Quaint: Likewise ay, ey, oy, uy; aw, ew, and ow be come Diphthongs at the End of Words, but are called in proper Diphthongs; as in fay, key, joy, faw, bow, &c. Not aw, ew, and ow are commonly founded as au, eu, and ou.

Of Letters Great and Small, and when to be used.

IRST Negatively, Great Letters are not to be used the Middle or latter End of a Word, except the who Word be so written, as in JEHOVAH, LORD, or Titles of Books, &c. For it would be very abfurd to will thus: To Mr. geoRgE RoGeRs in thaMes StReEt; infles of To Mr. George Rogers in Thames-Street.

SECONDLY positively, Great Letters, or Capitals, are be written at the Beginning of Sentences; as, Fear Ga Honour the King. Know when to Speak, and when to be

your Tongue.

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After every Period, or Full-stop, when new Matter beins: As, Some time after that Accident, another happened, which was as follows. On the 16th Day of May, &c.

At the Beginning of all proper Names of Places, Ships, ivers, &c. as Loudon, the Dreadnought, Thames, Severn I life the Christian Names and Surnames, both of Men and Jomen, must begin with great Letters; as Samuel Sharp, lary Sweeting, &c.

At the Beginning of the more eminent Words in a Sennce: as Faith is the Foundation of the Christian Religion; of any Word that we have a particular Regard or Derence for; as God, Christ, King, Queen, &c.

At the Beginning of every Line in Poetry; as, Improve your Time: Time passes quickly an;

Nor doth fo good succeed, as that that's gone.

At the Beginning of the Names of Arts, Sciences, and rades; as, Writing, Arithmetic, Geometry, Music, Carnter, Smith, &c.

Note, The Personal Pronoun I, and the Interjection O, ust be always wrote in Capitals; for it is ridiculous to rite thus: On Monday last i came to your House, but you as not at home, o how much it grieved me!

Laftly, All Nouns Substantives may begin with a great

etter; and a Substantive may be known by the Signs either A, An, or The before them; as, a House, a Mill; as a, an Ass, the City, the River, &c. but the Adjective thich declares what fort of a Thing the Substantive is) buld be wrote with a small Letter; as, the white Horse, a long Rope, brown Bread, fat Beef, &c. and small Letters are commonly written in all other Places.

Note, This Custom of beginning all Substantives with pital Letters, is not followed, at present, by polite Au-

The small Letter s is commonly written f at the Beging and in the Middle of a Word, and s at the End s but wo of them come together in the Middle of a Word, y may be written thus, s.

servations concerning the Sound of Letters, and which are omitted in Pronunciation.

Is not sounded in Pharaoh, nor in Sabaoth, but as if written Pharo and Saboth; neither in Marriage, but Marrige; also Parliament as Parliment, and Chaplain as B 2 Chaplen,

Chaplin, &c. In some proper Names it is not sounded, but dropt in the Pronunciation; as in Aaron, Isaac, Canaa Balaam; which are pronounced as if written Aron, Isaac Canaan, Balam; but we must except Ba-al and Ga-al. is sounded broad like aw in Words, before Id and Il; as bald, scald, ball, wall, fall, &c.

B is not founded in thumb, dumb, plumb, lamb, doubt debt, subtle, &c. but sounded as if written, thum, dum, plus

lam, dout, det, futtle.

C is founded hard like K, before a, o, and u, and before l and r; as in these Words, cane, came, comb, cub, claserane, crab; and soft in cement, city, and tendency: C losethin Sound in scene, science, victuals, and verdict; likewise indict, indictment; also before k, as in stack, rack, sin thick, brick. In Words of Greek and Hebrew Derivation, is sounded like K, as in sceptic, sceleton, Cis, Aceldan &c.

Ch is founded like K, in many foreign Words, some which occur in the holy Scripture; as in Chorus, Chemi, Chrysostom, Christ, Chedorlaomer, Baruch, Archippus, & In the Word Schism, the Sound of Ch is lost, it bets sounded as if wrote sism; and in the Words Rachel, Cherust and Archbishop, it is sounded in the English manner. In French Words sounds like sh, as in Chevalier, pronou ced Shevalier; Machine, Masheen; Mareschal, Marsha Copuchin, Capusheen; Chaise, Shaize, &c.

D is not sounded in Ribband, nor in Wednesday, whi are pronounced Ribbin and Wensday; the Termination doften shortened into t; as burned, burnt; choaked, cheat

ripped, ript; paffed, paft; chopped, chopt; &c.

E is not sounded in beart, neither in bearth, or dear &c. E final, that is placed at the End of a Word, is selds heard but in Monosyllables, as in me, he, she, ye, the, he where it hath the Sound of ee: And in Words derived for foreign Languages; in which e hath its perfect Sound; Jesse, Jubile, Mamre, Ninewe, Candace, Cloe, Eunice, Palope, Salmone, Phebe, Epitome, Catastrophe, Gethsima simile, premunire, &c. In all other Cases E final serves to lengthen the Sound, and to distinguish it from out Words of different Meaning, which are wrote without and are sounded short; as in these Examples following, cane, can; bate, bat; bite, bit; fare, far; bope, bop; mad; mane, man; scrape, scrap; stare, star; tune, to

write ength crease obeme, Word Kemite fonant Yet a nurs, t found centre, founde mauger g, as i Nouns fore it, Pope ; out an Tables. feldom ing, los before be writ gain, fe is anne otherw tue, &c Laftly,

Fin flaves.

G is feignior, ginger, Geth-fe fon, Gils Words, gild, &c ue is jo Plague,

Gh in fore, ha

&c.

write, writ, &c. In Words of more than one Syllable, it engthens the Sound of the last Syllable, but doth not increase the Number of Syllables; as admire, demise, blafbeme, &c. E lengthens the Syllable also in some foreign Words, fuch as Eve, Tyre, Crete, Ode, Scheme, Dialogue, Kenite, and Shu-la-mite. E is seldom wrote after two Confonants; as in pafs, turn, black , not paffe, turne, blacke. Yet after rs it is used, as borfe, nurse, purse; not bors, nurs, purs, Also the Words ending in ere, gre, and tre, found the e before the r, as in these Words; acre, lucre, centre, sepulchre, tygre, maugre, mitre, luftre; which are founded as if written aker, luker, center, fepulcher, tyger, mauger, miter, and lufter. E final also serves to soften e and g, as in ace, place, lace, spice, truce, oblige, buge, age, &c. If Nouns in e final take s after them with an Apostrophe before it, it stands for his, as the Pope's Eye, or the Eye of the Pope; the Table's Foot, or the Foot of the Table: If without an Apostrophe, it makes the plural Number, as Popes, Tables. Words derived from those wrote with E final, seldom retain it, as in writing, lowing, doing, &c. not writeing, loveing, or doeing; except in the Terminations ge and ce before able, as in changeable, peaceable, &c. E should not be written after a Diphthong in these Words; vain, main, gain, fear, know, &c. not vaine, maine, gaine, &c. E final is annexed, but not founded in those Words which would otherwise end with i, o, or w; as in die, foe, floe, true, wirtue, &c. but there are some Exceptions, as do, fo, to, &c. Laftly, there are some Words in which the final E doth not lengthen the Sound, as give, live, some, one, done, &c.

F in Plurals is changed into w; as wife, wives; flaff,

flaves.

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G is not sounded in sign, reign, gnaw, gnat, assign, design, seignior, seraglio, phlegm, &c. G is sounded soft in gender, ginger, and gipsey; but hard in Gibbon, Giberab; Gilbon, Geth-se-mane; and hard also in these proper Names, Gibson, Gilman, and Gilbert; and likewise in these common Words, gelt, geld, girt, gimp, geese, gander, gabble, gather, gild, &c. Observe, That if G be hard with a long Vowel, we is joined, and pronounced in the same Syllable; as in Plague, Prague, Hague, rogue, league, dialogue, catalogue, &c.

Gb in the End of some Words, where au or ou goes before, hath the Sound of ff, as in tough, rough, cough, laugh,

B 3 founded

founded as if tuff, ruff, coff, laff; but buff, cuff, fruff, and buff, must be so written—Gb is not founded in might,

though, through, daughter, and Vaughan.

H hath Place, but no Sound in Chronicle, Chrift, Ghoff, John, Rhine, Schedule, and Schism, &c. H is not sounded at the End of Words, if it be alone, but, with the before it, it is sounded, as snatch, watch, &c.

I is not founded in adieu, juice, venison, fruit, bruise, Salisoury; it is sounded like ee in oblige, Magazine, and Machine, &c. I is sounded long in proper Names ending in iab, as feremiab, Hezekiab; but short in A-ri of and Miriam——I is sounded like u in first, dire, bird, &c.

K is nearly allied in Sound with C; but to know when to use one, and when the other, Note, that C hath the Force of K only before a, o, oo, and u, and these two Consonant I and r; and therefore we must not write have for com, know for cow, known for crown: And the Use of K is only before e, i, and n; wherefore we must write keep, key, knight, kill, &c. not ceep, cey, cnight, nor cill: But the Words Catendar, Catharine, are wrote sometimes Kalendar, or Katharine. K is written after c only in pure English Words, such as back, deck, sick, &c. for the best Authors have omitted a words derived from the Greek and Latin, such as public, music, physic, &c.

L is not sounded in calf, balf, chalk, flatk, walk, thoke Words being pronounced as if written case, base, chalk, stank, wank. Neither is I sounded in Bristol, Holborn, Lincoln, salmon, or chaldren; these are sounded as if writ, Bristow, Hobern, Lincon, Sammon, and chaudren; nor in Colonel, where the first I hath the Sound of rr, as Corronel.

In the Word accompt, mp is founded like un.

N is not heard in autumn, lime-kiln, folemn, limn, bymn,

column, and condemn.

O is not founded in people, fooffee, bason, mutton, yeoman, mason, righteous, bacon, jeopardy, and crimson.—O sometimes sounds like oo; as in doing, moving, proving, &c. O is not heard in damssel, carrion; which are pronounced as if writ damsel, carrin—O is sometimes sounded like i; as in women and stagon, pronounced as if wimmen and stagon. And sometimes O is sounded as u, as in money, conduit, conjure, attorney, Monmouth, &c. being heard as if with munney, cundit, cunjure, atturney, Munmouth, &c. and it is sounded like oo in do, to, prove, move, &c.

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P is written, but not founded, in empty, prasumptuous, sfalm, fumpter, attempt, pfalter, and fymptom; also in fump-

tuous, contemptuous, receipt, and confumptive, &c.

Pb hath the Sound of f, when together in one Syllable; as in philosophy, physician, Ajaph, and Elephant; but we must not write filosophy, fifician, nor Asaf, or elefant: Pb are parted in Shep-berd, up-bold, and in Clap-bam; and other fach compounded Words.

After 2 always follows u in all Words; and in some French and Latin Words they have the Sound of k; as in rifque, liquor, catbolique, banquet, conquer, mafquerade, chequer ; pronounced as rifk, likker, catholic, banket, &c. to which add oblique, relique, antique, &c. which are founded as if written oblike, relike, antike, &c.

S is not founded in island, viscount, isle, and Life; which are pronounced as if wrote iland, viceunt, ile, and Lile.

S, at the End of Words, founds hard like z, in Words of the plural Number, and in Words of the third Person; as names, everms, be reads, the bears. S founds hard in fome Words that terminate in fion, as in eireumcifian, evafion, delusion; but, after a Confonant, faft, as in conversion, commisfion, dimension. S is likewise sounded hard in these Words, raife, praife, chaife, cheefe, thefe, compose, expose, bruife, refufe, applaufe, paufe, claufe, wifdom, cafement, and damofel.

Th founds fine in thin, think, and wrath; and is founded hard in thee, then, they, that, blitbe, titbe, and fythe; also in mother, brother, bither, thither; and in lethe, clothe, and clothier, &c.

Ti, before a Vowel or Diphthong, hath the Sound of fi or sh; as in patience, dictionary, Gratian, oblation, nation, translation; except when f goes just before it, as in these Words, question, fustian, bastion, combustion, and celestial, bestial, &c. But, in some Words of Hebrew and Greek, ti retains its natural Sound; as in Shealtiel, Phaltiel, Shepatiab, Cotittia, Adramyttium, and the like; and in the English Derivatives mightier, and mightiest, emptiest, emptied, pi-ti-able, &c.

U is founded like i in bury, birry; bufy, bizzy; bufinefs, as bizness. U is sometimes written after g without being founded, as in guide, guard, &c. It is also filent in the Words buy, built, conduit, circuit, labour, favour, bonour, &c. but it is founded in others, as anguish, languish, Montague, &cc.

B 4

W is not founded in answer, sword, whore, swoon, &c. neither is it heard before r in wrap, wrath, wrong, wretch, wreath, wrangle, wriggle, &c.

Wh belongs to Words purely English; as what, when,

where, and wheel.

X is founded as z, in Xenophon, Xerxes, Xenocrates, and

Xantippe.

I is either a Vowel or Consonant, as hinted before: A Fowel, in my, by, fly, thy; and sometimes, when a Vowel, it hath the Sound of ee, as in worthily, christianity, liberty, formerly, formally, Normandy, and Dorothy. In derivative English Words, having the Termination ing, y is used in the Middle of the Word, as in buying, dying, burying, marrying, &c.

The Diphthongs ai and ay have the Sound of a in air, fair, pair, may, flay, play; but a is lost in Calais (a Town in France) and pronounced separately in Sinai, (a Mountain

of Arabia.

Ei and ey are founded like a in eight, fraight, neighbour, beir, weil, and convey; like e in key, and like i in fleight.

Oi and Oy have a Sound peculiar to themselves; as in oil and oyster; but make no Diphthong in the Derivatives

going, doing, &c.

Au and Aw commonly keep a proper Sound; as in augur, austere, daw, maw, saw, &c. but u is lost in aunt and gauger, being sounded as ant and gager; they make no Diphthong in Emma-us and Ca-per-na-um.

Eu and Ew have an united Sound in most Words, as in feud, brew, new, and grew; but eu is no Diphthong in

Zac-che-us and Bar-ti-me-us.

Ou is expressed in foul, foul, proud, loud; and ow in bow, cow, and now; but ou founds like oo in foup, (a French Dish) and Cowper (a Man's Name), which are sounded as if foop and Cooper.

Ee is no Diphthong in Be-e-rites, Be-er-she-ba, and in Words beginning with re, or pre; as re-en-ter, pre-e mi-

nence: In Beelzebub one of the e's is not founded.

Oo is properly founded in cool, fool, pool, root, and tool, but hath the Sound of u in foot, and foot; it makes no Diph.

thong in Co-os, co-o pe-rate.

Ea sounds like e in sea, pea, seam, ream, bread, bead, lead, dead, leather, feather, beaven, leaven, and creature; it is no Diphthong in wenge-ance, mis-cre-ant, or any Hebrew,

jath ti-tue am-b

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brew, Greek, or Latin Words; as in Kadeft Bar-nea, Kirjath je a rim, nor in Ce-fa-re a, i-de-a, o-ce-am, re-al, be-cti-tude, cre-a-tor; nor in Words beginning with pre, as pream-ble, &c.

Eo is no Diphthong in dunge-on, bide-ous, mete-or, pige-on,

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Oa is founded as o, in goat, boat, and coat; it is founded broad, as au, in broad and groat, but is no Diphthong in Goa, (a City in India) or in the Hebrew Words Zoan, Zoar,

and Gilboa.

le before a fingle Consonant founds like ee, as in brief. chief, and thief; but if before two Confenants, it founds like e; as in friend, field; but at the End of English Words, the e is not heard, as in die, fignifie; it is no Diphthong in A-bi-e-zer, E-li-e-zer, nor in the English Words di-er, carrt-er. clo-thi-er; nor in Words derived from the Latin, as eli-ent, o-ri-ent, qui-et, and fci-ence.

Ui is founded as u in juice, fruit, and fuit; but u is loft in conduit, build, and guife, and is no Diphthong in je-fu it,

ge-nu-ine, and fru-i-ti-on.

Æ and OE are not English Diphthongs; they are used in Elop, Aneas, Atna, Cafar, Oedipus, Oeconomy, and found like e; but in common Words they are neglected, as in. equity, female, and tragedy, tho' derived of aquitas, famina, and tragadia.

Of Syllables, and their Division, being the Art of Spelling.

Syllable is a tacking Letters together, and uttering them A in one Breath, as vir-tue, to that virtue being thus divided, or taken afunder, makes two Syllables, viz. vir, and tue; which, put together, form the Word virtue. And many times a Vowel, or a Diphthong of themselves, make a Syllable, as in a-bate, e-ve-ry, i-dle, o ver, u fu ry; and in au-ger, Eu-flace, ow ner, ai-der, oy-fter, Ea-ton, oa-ten : No Syllable can be made, be there never fo many Confonants. or so few, without the Aid of a Vowel or Diphthong.

The longest Monosyllables we have in English, are length, firength, and firaight; which could not be founded without

the Vowel e or i.

The Art of Spelling may be reduced to these four following general Rules or Heads: B 5

1/

If, When a Confonant comes between two Vowels, in dividing the Word into Syllables, the Confonant is joined to the latter Vowel; as in flature, nature, de-li-ver, u-ni-ty, &c. except compound Words, which terminate in ed, en, eft, eth, er, ing, ifh, and our; as coaft-ed, gold-en, know-eff, know-eth, bear-er, fool-ing, bar-bar-ous, ra-ven-ous, and fub-urbs.

adly, When two Confonants come together in the Middle of a Word, they are to be parted, if not proper to begin a Word; as num-ber, firan-ger, for-tune, &c. not numb-er, franger, fort-une: When the fame Confonant is doubled in a Word, the first belongs to the foregoing, and the latter to the following Syllable, as in the Rule above, and in these

Words, Ab-ba, ac-cord, an-no, ad-der, &c.

3dly, Consonants that begin Words, must not be parted in the Middle; as a-gree, be-stow, re-frain, &c. not ag-ree, best-tow, ref-rain.—These Consonants may begin Words, wix. bl, br, cb, cr, dr, dw, fl, fr, gb, gl, gr, kn, &c. as blunt, break, chaw, cry, draw, dwell, slesh, gbost, &c.

Diphthong, they must be divided, as in wi-al, wa-li ant,

Li o-hel, du-el, cru-el, me-te-or, and La-a-di-ce-a.

Some particular Notes:

L is doubled in Words of one Syllable; as well, tell, fwell, ball, wall, fall, will, bill, mill, &c. But in Words of more than one Syllable, the Word always terminates with fingle l, as angel, Babel, bursful, beautiful, and dutiful. Neither must l be doubled in always, also, although; not allways, also, although, &c. But Words accented on the last Syllable, must be excepted from the Rule above, win, install, recall, inroll, rebell, and repell.

I must be used before the Termination ing, as buying;

lying, carrying, marrying, paying, flaying, burying, &c.

The long f must never be used at the End of a Word,

or immediately after the short or small s.

X should be used instead of &, where it appears to have been in the Original; as reflexion, connexion, rather than restection, or connection.

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emn: Againn did to charge ;-11-17, C must not be put between two Confonants; as think, not en. thinck; thank, not thanck; brink, not brinck; but if a o-eft, Vowel goes before c, you must write c before h, as brich, and thick, flick, &c. Ph must be retained in Words of a foreign Original; as ddle prophet, not profet: in a Of S and C. Some People may eafily drop into Error by b-er, mistaking S for C, as in the Beginning of the following d in Words, where C hath the perfect Sound of S, though C tter must undoubtedly be written; viz. in hefe Cieling Cinnamon Cell Ceruse Ceremony Cenfer Centre Celestial rted Civet Cellar Celerity Cinque ree. Censure Cypress Cypher Certain rds. Cymbal Cenfor Circle City unt, Ceafe Circuit Citron Ciftern · Centurion Celebrate Cement g a ant, But these Words must be written with S. viz. Sceptre Scarcity Sciatica Science Scheme Schifm Scythian The following Words should be wrote 111, rds with ti with fi. ates Contention Confusion uti-Action Occasion b : Contradiction Contumion on Oppression Attention 77% Allufion Benediction Afcention Apparition ng, Concoction Aversion Afperfion Declaration rd, Commission . Ambition Contrition Comprehension ve Oration Circumcifion an Conclusion Oblation The following Words should be spelt thus, rd Paffion, not Pashon. Salisbury, not Salsbury. of

Fashion, not Fation. Leicester, not Lester.
Cushion, not Cution. Shrewsbury, not Shrosbury.

Gloucester.

n. 1. 1

Gloucester, not Gloster. Worcester, not Worster. Carlisle, not Carlile. Westminster, not Westmisser.

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Buoy, Bread

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Bruit,

Brute,

Burro

Another Qualification in Spelling, is rightly to diffinguish Words of the fame Sound, though widely different in their Sense and Signification: Such are these that follow,

viz. Bel, Cain's Brother Able, to do a Thing A Bell, to ring Accidents, Chances Accidence, a Book Acre, of Land Acorn, of an Oak Achor, a Valley of that Name Advice, Counsel Advise, to counsel Account, Esteem. Accompt, or Reckoning Ale, a Drink Ail, Trouble All, every one Awl, for Shoemakers Alley, a narrow Place Ally, a Friend or Confederate Allay, to give Ease Alloy, baser Metal Altar, for Sacrifice Alter, to change Ale-boof, an Herb Aloof, at a Distance Allow'd, approv'd Aloud, to speak to Amis, wrong A Miss, or Mistress Ant, a Pilmire Aunt, a Father's Sifter Anchor, of a Ship Anker, a Runlet

A Peal, of Bells

Appeal, to higher Powers

Appear, to be feen

A Peer, a Lord Aray, good Order Array, to clothe A Rose, to smell to Arose, did arise Are, they be Air, we breathe Heir, to an Estate Arrant, notorious Errand, a Message Arrows, to shoot. Arras, Hangings Harras, to fatigue A Scent, or Smell Ascent, a going up. Affent, Agreement Affiftance, Help Affifiants, Helpers Augur, a Soothfayer. Augre, to bore with Ax, to cut with Atts, of Parliament Austere, severe Oyfter, a Shell-fish B Babel, the Tower Babble, to prate Bacon, Hog's Flesh Baken, in the Oven Becken, to make a Sign Beacon, to be fired on a Hill Bail, a Surety Bale, of Goods Bald, without Hair Bawl'd, ery'd out Ball, to play with

Bawl

Bawl, to cry aloud Barbara, a Woman's Name Barbary, in Africa Barberry, a Fruit Bare, naked Bear, a Beaft, or to bear Bays, of Bay-trees Baize, Cloth, of Colchester Bafe, vile Bass, in Music Belly, Part of the Body Belie, to speak falfly Be, they are gamb of the the Bee, that makes Honey Beer, to drink Bier, to carry the Dead on Bell, to ring Bel, an Idol Berry, a small Fruit Bury, the Dead Blue, a Colour Blow, as the Wind Board, a Plank Bor'd a Hole Boar, a Beaft Bore, to make hollow Boor, a Country Fellow Bold, confident Bowl'd, at the Jack Bolt, the Door Boult, the Meal Beau, a Fop Bow, to bend, or the Bow Bough, of a Tree Boy, a Lad . Alob Sale And Buoy, of an Anchor. Bread, to eat Bred, brought up Breeches, to wear Breaches, broken Places Bruit, a Report Brute, Beaft Burrow, for Coneys

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Borough, a Corporation By, near totte a service Buy, with Money Brews, he breweth Bruife, a Hurt Brewis, of Fat and Bread Buss, a fishing Vessel Buz, the Noise of a Fly

an Grand at Am Cain, that killed his Brother Cane, to walk with Caen, in Normandy Calais, in France Chalice, a Cup Call, by Name Cawl, or Suet Cannon, a great Gun Canon, a Rule Canon, of a Cathedral Capital, great or chief Capitol, a Tower in Rome Career, full Speed Carrier, of Goods Cellar, for Liquors Seller, that felleth Censer, for Incense Cenfor, a Reformer Censure, to judge Centaury, an Herb Century, an hundred Years Centry, a Sentinel, a Soldier on Guard Char, a Fish Chair, to lit Chare, a Job of Work Champaine, Wine of France Campaign, a wide Field, or

Summer's Expedition Choler, Rage or Anger Collar, of the Neck Coller, of Beef or Brawn Cieling, of a Room Sealing, with a Seal

Cittern

Cittern, for Music Citron, a Fruit TENST. Choir, of a Cathedral Quire, of Paper Clerk, a Clergyman Clerk, of a Parish Clause, Part of a Sentence Claws, of a Beaft or Bird Coat, a Garment Cote, for Sheep Comb, for the Hair Come, hither Commit, to do Comet, a blazing Star Common, ufual Commune, or converfe Condemn, to Death Contemn, to despife Council of the King Counsel, Advice Courfe, not fine Courfe, to be run Cornbil, a Street in London Cornwal, a County Cou'd, or could Cud, to chew as Beafts Current, a paffing or running Stream of the state of the stat Courant, a Meffenger, or New's-paper 914 600 Currants, Fruit Crick, in the Neck Creek, of the Sea or River Coufin, a Relation Cozen, to cheat Cymbal, a mufical Instrument Symbol, a Mark or Sign Cypress, a Tree Cyprus, an Island Cruse, for Oil Cruize, by the Sea-coaft Cygnet, a young Swan Signet, a Seal

saictaDwa na Dane, of Denmark Deign, to vouchfafe Dam, stopping Water Damn, to condemn Dame, a Mistress Dear, of Price Deer in a Park Deceased, dead Diseased, fick Decent, becoming Descent, going down Diffent, to difagree Deep, low in the Earth Diep, a Town in France Defer, to put off Differ, to difagree Derbe, a City of Afia Derby, a Town in England Defert, Merit Defart, Wilderness Dew, a falling Mift Due, owing Do, to make Doe, a Female Deer Dough, Pafte Don, a Spanish Lord Done, acted Dun, of Colour Dolphin, a Fish Dauphine, the French King's eldest Son Devices, Inventions Devizes, a Town in Wilt birt Doer, that doth Door, of a House Dragon, a Beaft Dragoon, a Soldier Draught, of Drink Drought, Dryneis Dolour, Grief or Pain Dollar, a Piece of Money

Demure, fobet

Demu

Ear, E'er. Year, Early. Yearly Earth Heart Eafter Efiber Enter, Inter, Elder, Eldern Eaten, Eaton, Eminer Immin Enow, Enough Earn, Yarn, Yearn, Eaft, t Teaft, Enwy,

Err, to Er, Bro Fud. Extant Extent,

Envoy,

Exerci Exorci

Fain, d Feign, Fair, b Fare, \ Faint,

Feint, 2 Fourth, Forth, t

Demury

Demur, a Stop or Doubt

Ear, of the Head

E'er, ever

Year, twelve Months Early, betimes

Yearly, every Year

Earth, the Ground

Hearth, of the Chimney

Eafter, the Festival

Efther, a Woman's Name

Enter, to go in

Inter, to bury

Elder, not the younger

Eldern, a Tree

Eaten, or swallowed

Eaton, a Town's Name

Eminent, famous

Imminent, over Head

Enow, in Number

Enough, in Quantity

Earn, to deferve Yarn, Woollen-thread

Yearn, to pity

East, the Wind

Yeaft, used in making Beead

Enwy, or Hatred

Envoy, a Messenger

Exercise, Labour or Practice

Exorcife, to conjure

Err, to mistake

Er, Brother to Onan, Son of

Judab.

ing's

hirt

Extant, in being

Extent, Distance

R

Fain, defirous

Feign, to dissemble Fair, beautiful, or a Market

Fare, Victuals

Faint, weary

Feint, a Pretence

Fourth, in Number

Forth, to go out

Feed, to eat

Fee'd, rewarded

Fir, Wood Fur, or Hair

Felon, a Criminal

Fellon, a Whitlow File, of Steel

Foil, put to the worst

Fly, as a Bird -

Fly, an Infect

Fillip, with the Fingers

Philip, a Man's Name

Flower, of the Field Flour, Meal

Floor, of a Room

Follow, to come after

Fallow, Ground not plow'd

Find, to find any thing

Fin'd, amerced,

Fiend, a Devil

Flea off the Skin, and allo a

Vermin -

Flee, to escape

Flue, of a Chimney

Flew, did fly

Fowl, a Bird

Foul, dirty Francis, a Man's Name

Frances, a Woman's Name

Frays, Quarrels

Fraife, Pancake with Bacon

Frize, a Sort of Cloth

Freeze, with Cold

Gall of a Beaft

Gaul, France

Garden, of Herbs Guardian, an Overfeer

Genteel, graceful Gentile, a Heathen

Gentle, mild

Gesture, Carriage

Tefter, a metry Fellow

Groan with Grief Grown greater Guilt of Sin Gilt with Gold Greater, bigger Grater for Nutmegs Grave for the Dead Greave, Armour for the Leg Guess, to imagine Gueft, one entertained Gluttonous, greedy Glutinous, flicking as Pitch Great, large Grate for Coals, &c. Greet, to falute Graze, to eat Grass Grays, a Town Great, four Pence Grot, a Cave Gallies, Ships with Oars Gallows, for Criminals H Hare in the Fields

Hair of the Head
Heir, to an Estate
Harsh, severe
Hash, minced Meat
Haven, a Harbour
Heaven, a Place of Happines
Heart of the Body
Hart in the Woods, or an over-grown Buck
Herd of Cattle
Heard, did hear
Hard, not soft, or difficult
Here, in this Place
Hear with the Ears

High, lofty
Hie, away, make hafte
Hoy, a fmall Ship
Him, that Man

Hymn, a spiritual Son

Hail, congealed Rain Hale the Ship Hall, in a House Haul, pull Heel, of the Foot Heal, to cure He'll, he will Higher, taller Hire, Wages His, of him Hifs, as a Snake, or to deride Hoar Frost Whore, a lewd Woman Hole, or Hollowness Whole, intire Ho! lo! to call Hallow, to make holy Hollow, having a Cavity Holy, pious Wholly, intirely Holly, a Tree Home, one's House Whom? what Man? Holm, Holly Hoop for a Tub Whoop, or ho! lo! Hugh, a Man's Name Hue, of Colour Hew, with an Ax

I, I myself
Eye, to see with
Idle, lazy
Idol, an Image
I'll, I will
Ile, of a Church
Isle, an Island
Oil of Olives
Imploy in Work
Imply, to signify
In, within
Inn for Travellers
Incite, to stir up

Infight Ingen Ingen Iron; Ironie Itch, Hitch

Ketch Catch Kill, Kiln, Kind, Coin'd Knaw Nawe Knigh Night, Kenne Chann

Laid, Lade t Lane, Lain, Latin, Latten Ladder Lather Lattice Lettice Letuce Lease Leofh, Lees of Leefe, a Leaper Leper, Leffen, Leffon, Leaft, 1

Left, fo

Letharg

Infight

Infight, Knowledge
Ingenious, of quick Parts
Ingenuous, candid
Iron, Metal
Ironie, speaking by contraries
Itch, a Distemper
Hitch, to catch hold
K

Ketch, a Ship
Catch, to lay hold of
Kill, to flay
Kiln, for Lime
Kind, good natur'd
Coin'd Money
Knave, dishonest
Nave of a Wheel
Knight by Honour
Night, Darkness
Kennel, for Dogs
Channel, for Water

Laid, placed Lade the Water Lane, a narrow Street Lain, did lie Latin, a Tongue Latten, Tin Ladder, to ascend Lather, made with Soap Lattice of a Window Lettice, a Woman's Name Letuce, a Salad Lease of a House Leofb, three Lees of Wine Leefe, an old Word for lose Leaper, that jumpeth Leper, one leprous Leffen, to make less Lesson, to be read Least, smallest Lest, for fear Lethargy, Sleepiness

Liturgy, Church-service Lier in wait Lyar, that tells Lies Limb, a Member Limn, to paint Line, Length Loin of Veal Liquariff, fond of Dainties Liquorice, a Plant, or its root Low, humble Lo! behold Lose, to suffer Loss Loofe, to let go Lower, to let down Lour, a Frown Loath, to abhor Loth, unwilling

Made, finished Maid, a young Woman Main, Chief Mans of a Horle Male, the He Mail, Armour Manner, Custom Manor, a Lordship Manure, dung Market, to buy or fell in Mark it, note it Marsh, low Ground Mass for a Horse Melb, of a Net Martin, a Man's Name Marten, a Bird Mead, a Meadow Mede, one of Media Mean, of a low Value Mein, Carriage or Aspect Meat to eat Meet, fit Mete, to measure Message, Bufiness Messuage, a House

Mean ,

fight

eride

Metor for Hawks Muse, to meditate Mighty, powerful Moiety, half Mile, Measure Moil, Labour Might, Strength Mite in Cheefe Moat, a Ditch Mote in the Sun Moan, to lament Mown, cut down More in Quantity striki. Moor, a Black Mower, that moweth Moore, barren Ground Morter, made of Lime Mertar to pound in Mole, Vermin Mould to cast in Muselo, a Shell-fish Muzzle, to cover the Mouth

N Nay, Denial Neigh as a Horse Neither, none of the Two Nether, lower New, not old Knew, did know Naught, bad Nought, nothing Nigh, near Nye, a Man's Name Nice, curious Niece, a Brother's Daughter Not, denying Knot, to tye Note, Mark Note of one's Hand Nose of the Face Knows, understands No. a Denial Know, to understand

Neal, to harden Glass Kneel, on the Knees None, not one Known, understood Nows, Tidings Noofe, a Snare

Oar of a Boat
Ore, crude Metal
O'er, over
Off, cast off
Of, belonging to
Our, belonging to us
Hour of the Day
Oh! alas!
Owe, in Debt
One in Number
Won, at play
Own, to acknowledge
Order, Rule
Ordure, Dung

Pair, a Couple Pare, cut off Pain, Anguish Pane of Glass Pear, a Fruit Pattin for a Woman Patent, a Grant Peer, a Lord Pier, of Dower Peter, a Man's Name Petre, Salt Pail for Water Pale of Countenance Pale, a Fence Pall, for a Funeral Paul, a Man's Name Plait, the Hair Plate, Metal Place, Room Plaise, a Fish Parson, of the Parish

Polis Pool Port

Per

Poor Pala Pala Poin Point Pofy Poef

Prey Prey Pray Proj Proj

Prof Prac Prac Prac Prej

Prin Prin te Plea

Plea Prec Prefi Prin Prin

Quit Choi Quee Que

Rack

Perfon, any Man Pole for Hops Poll of the Head Pool of Water Pore with the Eyes, or of the Skin Poor, necessitous Palate of the Mouth Pallet-bed Palliate, to cover or hide Point, a Stop Pint, half a Quart Posy, a Nofegay Poefy, Poetry Power, mighty Pour, as Water -Prey, a Booty Pray, to befeech Profit, Gain Prophet, a Foreteller Prophecy; a Foretelling Prophely, to foretell Practice; Exercise Practife, to exercise Presence; being here Presents, Gifts Princes, the King's Sons Princeffes, the King's Daughters Please, to content Pleas, Excuses or Defences Precedent, an Example President, Chief Principal, Chief Principle, the first Rule

Quire of Paper
Choir of Singers
Queen, the King's Wife
Quean, a Harlot
R
Rack, to torment

Rack, to torment Wreck of a Ship

Arrack, a strong Liquor Rain, Water Reign of the King Rein of a Bridle Rays of the Sun Raife, lift up Raifin, a Fruit Reafon, Argument Race, to run Rafe, to demolift Rice, Grain Rife, to get up Red, in Colour Read, the Book Reed growing in the Water Relick, a Remainder Relia, a Widow Roe, of a Fish, or a Deer Row the Boat Right, not wrong Rite, a Ceremony Write, with a Pen Wright, a Wheelwright Redifb, Colour Radifo, a Root Rear, fet up Rere, behind Arrear; of Rent Reft, Quiet Wreft, to pervert Roof, the Top of an House Ruff for the Neck Rough, not fmooth Rie, Corn Rye, a Town in Suffer Wry, crooked Ring the Bells Wring the Hands Rime, a Fog or Mist Rhyme, Verfe Rind of Cheefe Rode, did ride Road, the Highway Row d. Row'd, did row
Room, Part of a House
Rome, the Name of a City
Roam, to wander
Rheum, a Humour
Rote, got by Heart
Wrote, did write
Wrought, did work

Savour, Tafte or Smell Saviour, that faves Satiety, Fulness Society, Company Sheep, a Beaft Ship, for the Sea Sight, View Cite, to fummons Site, Situation Sail of a Ship Sale of Goods Sea, the Ocean See, with the Eyes Seam, in a Coat Seem, appear Seen, beheld Scene, in a Play Seas, great Waters Seize, to lay hold of Ceafe, to leave off Sent, did fend Scent, a Smell Shew, to make appear Shee, for the Foot Sink, fink down Cinque, five Slight, to despise Sleight, of hand Shoar, a Prop Shore, the Sea-coast Sewer, a common Drain Shown, view d Shone, did shine Slow, not quick

Sloe, Fruit Sew with a Needle Sue, at Law Sow, Seed So, thus Slight, neglected Some, a Part Sum of Money Soul, or Spirit Sole, a Fish Soal of a Shoe Son of a Father Sun in the Firmament Sore, painful Soar, aloft Swore, did fwear Sword, a Weapon Soar'd, did foar Stare, to look earneftly at Stair, a Step Stile to get over Style of Writing Sound, whole, firm; Noile Savoon, to faint away Soon, quickly Statue, an Image Statute, a Law-Stature, Height Stead, a Place Steed, a Horse Straight, not crooked Strait, narrow Succour, Help Sucker, a young Sprig Spear, a Weapon Sphere, a Globe Then, at that Time

Than, in Comparison

Tame, gentle, not wild

Dire

Thame, a Town in Oxford-

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Tear,

Tear, to rend Tear of the Eye Tare, an Allowance in Weight Tare, a Vetch Tail of a Beaft Tale, a Story Tiles for the House Toyles, Nets Toil, to labour There, in that Place Their, of them Thorough, compleat Throw, a Stone Throne of the King Thrown, as a Stone Tide, a flowing Water Ty'd, made fast Time of the Day Thyme, an Herb Team of Horses Teem, with Child To, the Preposition Too, likewife Two, a Couple Toe of the Foot Tow, to draw Tow, to be Spun Told, as a Story Toll'd, as a Bell Tour, a Journey Tower of a Church

Vacation, Leisure
Vocation, a Calling
Veil, a Covering
Vale, between two Hills
Vain, foolish
Vein of the Body
Vane, a Weathercock
Value, Worth
Valley, a Vale
Vial, a Glass
Viol, a Fiddle

Your, of you
Ewer, a Bason
Ure, Practice
Use, Practice
Use, to be wont
Ewes, Sheep

Wade in the Water Weigb'd in the Scales Whale of the Sea Wail, lament Waift, the Middle Wafte, to spend Wait, to flay for Weight, Heaviness Wear, Clothes Ware, Merchandize Were, was Where, what Place Weigh, to poife Wey, five Quarters Whey, of Milk Weal, good Wheal from Scourging Wield, a Sword Weald, of Suffex, or Kent Wen in the Neck When, at what Time White, of Colour Wight, an Island Whore, a lewd Woman Hear, Frost Witch, that conjures Which, who or what Wbift, Silence Wift, knew Wood, of Trees Wou'd, or would

Yea, yes
Ye, yourselves
Ewe, a Sheep

Your

Yew, a Tree You, yourselves Yarn, made of Wool Yearn, to pity

Of Stops, Marks, and Points, used in Reading and Writing; with their Places and Significations.

HESE are of absolute Necessity; and great Regard ought to be had to them, to avoid Confusion and Misconstruction, and for the better understanding of what we read and write outfelves; and are likewife of use to other who shall hear us read, or see our Writing: They teach as to observe proper Distances of Time, with the necessary Raifing and Falling of the Tone or Voice in Reading, and the needful Stops or Marks to be used in Writing, that we may understand it ourselves, and that our Meaning may not be misunderstood, or misapplied by others.

Stops, or Paules, confidered as Intervals in Reading. are no more than four; though there are other Marks to be taken Notice of, but to other Purposes: the Names of the four Stops are, a Comma, Semicolon, Colon, and Period or full Stop; and these do bear to one another a kind of progressional Proportion of Time; for the Comma signifies a Stop of leifurely telling One, the Semicolon Two, the Colon Three, and the Period Four .- And are made

or mark'd thus:

Comma (,) at the Foot of a Word. Semicolon (3) a Point over the Comma.

Colon (:) two Points.

Period (.) a fingle Point at the Foot of a Word.

, Example of the Comma.) There is not any Thing in the World, perhaps, that is more talk'd of, and less understood, than the Bunness of a happy Life.

; Example of the Semicolon.) It is not a Carfe that makes way for a Blesling; the bare Wish is an Injury; the Mo-

deration of Antigonus was remarkable.

: Example of the Colon.) A found Mind is not to be shaken with popular Applause: But Anger is startled at

every Accident.

. Example of the Period.) It is a Shame, fays Fabius, for a Commander to excuse himself, by saying, I was not aware of it. A Cruelty that was only fit for Marius to suffer, Sylla to command, and Catiline to act.

By the Examples foregoing, we may eafily note, that a Comma is a Note of a short Stay between Words in the

Sentence;

Tone erfec Voice ect S ? V

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made ogati of M Envy the Se

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! I

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Part, fes, m hardl derfu make to the (whice be w must in by

> ough long ing fo as I'

> rence

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entence; and therefore the Tenor of the Voice must still e kept up.—The Semicolon is a little longer, and the Tone of the Voice very little abated.—The Colon signifies perfect Sense, though not an End of the Sentence; and the Voice a little abated, or let fall.—The Period denotes period Sense, and the End of the Sentence.

? When the Question is asked, there is a crooked Mark made over the Period, thus? and is called a Note of Intergration: Example, What could be happier than the State of Mankind, when People lived without either Avarice or Env;? The Time of Pause for this Stop, is the same with

he Semicolon.

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! If a sudden Crying-out, or Wondering be expressed, then this Mark is made over the Full Stop thus! and called a Note of Admiration, or Exclamation: Example, Oh the association would would would !

() If one Sentence be within another, of which it is no Part, then it is placed between two Semicircles or Parenthefes, made thus (): Example; Pompey, on the other fide (that hardly ever spake in Public without a Blush) had a wonderful Sweetness of Nature. Again; Of Authors be sure to
make choice of the best, and (as I said before) to stick close
to them. Once more; Honour thy Father and Mother
(which is the first Commandment with Promise) that it may
be well with thee.—In reading a Parenthesis, the Tone
must be somewhat lower, as a Thing or Matter that comes
in by the bye, breaking in as it were on the main Coherence of the Period. The Time is equal to a Comma, and
ought to be read pretty quick, lest it detain the Ear too
long from the Sense of the more important Matter.

'Apostrophe, is a Comma at the Head of Letters, signifying some Letter or Letters left out for quicker Pronunciation, as I'll for I will, would'st for wouldest, shan't for shall not, ne'er for never, is't for is it, 'tis for it is, i'th' for in the, o'er for over: Or to denote a Genitive Case; as, my father's

House, my Uncle's Wife, &c.

Accent is placed over a Vowel, to denote that the Stress or Sound in Pronunciation is on that Syllable.

Breve, or crooked Mark over a Vowel, fignifies it must

be founded fhort or quick.

derneath the Line, just where any thing, omitted by Mistake or Forgetfulness, &c. should be brought in.

placed over some Vowel, to shew the Syllable to be long as Eu-phrâ-tes.

Word, fignifies they are to be parted, being no Diphthone

Index, is a Note like a Hand, pointing to something

very remarkable.

Afterism, or Star, directs to some Remark in the Margin, or at the Foot of the Page. Several of them together denote something defective or immodest, in that Passage of the Author.

+ Obelisk is a Mark like a Dagger, and refers to the Margin, as the Afterism: And in Dictionaries it fignifies the

Word to be obsolete, or old, and out of use.

¶ Paragraph denotes a Division, comprehending several Sentences under one Head.

§ Section, fignifies the Beginning of a new Head of Discourse, and is used in sub-dividing a Chapter, or Book, into lesser Parts or Portions.

[] Brackets or Crotchets, generally include a Word or Sentence, explanatory of what went before; or Words of the same Sense, which may be used in their stead.

" Quotation, or double Comma reverse, is used at the Beginning of the Line, and shews what is quoted from a

Author to be his own Words.

Thus much for Pointing, Stops, and Marks; which, if carefully heeded and observed, will add Grace and Credit to your Writing.

xped y ma Word, A. fo

A.B. A.Bp. Acct.

A. D.

HOO

of of A. M. the.
Admrs

A.M. fter Ana, (Ap. A Adm¹.

Ag^t.

Am^t.

Anab.

Aug. I A. R. Yea Aft. P

fesse Aust. B. A.

B. D. B. V. Bart:

Bp. B. Cant. bur Cat. C

Chap. Chap. Cent.

Ch. C.

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TO be ready in these, shews a Dexterity in Writing; and is very necessary for Discrete. xpeditiously express, or fet down a Word, shortening it, w making some Initial Letter or Letters, belonging to the Word, to express it; as in the Table following.

A. for Answer, or After- Chron. Chronicles noon

A. B. Arts Bachelor A. Bp. Archbishop Acct. Account

A. D. Anno Domini, Year of our Lord A. M. Anno Mundi, Year of

the World Adm^{rs}. Administrators

A. M. Artium Magister, Mafter of Arts

Ana, of each a like Quantity Ap. April, or Apostle

Adm1. Admiral Agt. Against Amt. Amount

Anab. Anabaptist

Aug. August A. R. Anno Regni, in the

Year of the Reign Aft. P. G. Astronomy Professor at Gresham College

Auft. Austin, or Austria B. A. Bachelor of Arts

B. D. Bachelor of Divinity B. V. Bleffed Virgin

Bart: Baronet Bp. Bishop

Cant. Canticles, or Canterbury

Cat. Catechism Cha. Charles Chap. Chapter Cent. Centum

Ch. Church Chance Chancellor Capt. Captain Clem. Clement Col. Coloffians

Cl. Clericus Co. Country Coll. Colonel

Comrs. Commissioners Con. Constance or Constantine

Conf. Confessor

Cor. Corinthians or Corollary Cr. Creditor

C.R. Carolus Rex, or Charles the King

C. C. C. Corpus Christi Col-

C. S. Cuftos Sigilli, Keeper of the Seal

C. P.S. Custos Privati Sigilli, Keeper of the Privy Seal D. Dean, or Duke

Dan. Daniel

Dr. Doctor, or Debtor Dea. Deacon

Do. Ditto, or the same

D. Denarii, Pence Dec. or xber, or 10ber, December

Devon. Devonshire Deut. Deuteronomy Dec. Deceased

D. C. Dean of Christ-church

Doct. Doctrine

D. D. Doctor of Divinity E. for Earl

Earld. Earldom Edm. Edmund

Edw.

Edw. Edward 7 of. Jefus Example gratia, for Juo. John Example Jud. Judges Engl. England If Hoac Eliz. Elizabeth J. D. Jurium Doctor, Doc. E/a. Efaiah. tor of Laws Ech. Ephefians Eccl. Ecclesiastes K. King Ex. Exodus, or Example Km. Kingdom Ev. Evangelist Knt. Knight Exp. Explanation L. Lord Expo. Exposition Ela; Esquire Exon. Exeter French, or France Lp. Lordship Feb. February Pra. Francis F. R. S. Fellow of the Royal Society Gal. Galatians Gen. Geneßs Genmo. Generalissimo Gro. George G. R. George Rex, George the King Gar. Garifon Gen. General Gent. Gentleman Gofp. Gospel Greg. Gregory Hen. Henry Hamp. Hamper Hund. Hundred Hum. Humphry Heb. Hebrews i. e. Id eft, that is I. H. S. Jelus Hominum Salvator, Jesus Saviour of Men Ibid. Ibidem, in the fame Place Id. Idem, the fame Inft, Instance, or Instant Ja. James, or Jacob Jan. January

Jer. Jeremiah

Juf. Johna. noon 1. Liber, a Book L. Libræ, Pounds Lieut. Lieutenant Ladysbp. Ladyship LLD. Legum Doctor, Doc tor of Laws Learns. Learning Lond. London Lr. Letter Lam. Lamentations Lev. Leviticus L. C. J. Lord Chief Juffice M. Marquis, or Monday, or Morning Mar. March Mat. Matthew m. Manipulus, a Handful M. A. Master of Arts Maty. Majesty Md. Madam Monf. Monfieur Math. Mathematician Mr. Master Mrs. Mistrefs M. D. Medicinæ Dodor, Doctor of Physic M. S. Memoriae Sacrum Sacred to the Memory MS. Manuscript

MSS. Manuscripts

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Mich. Michael, or Michael

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q. quafi, as it were

Min. Minister N. Note Nat. Nathaniel, or Nativity N. B. Nota Bene, Note, or mark well Nic. Nicholas, or Nicodemus N. S. New Stile No. Number n 1. Non liquet, it appears not Nov. or gber. November O. Oliver Ohj Objection Obt. Obedient O. W. Old Word O. S. Old Style . Oa. or 8ber, October Doc: Oxon. Oxford P. Paul, Paulus, Publius, or Prefident Pugil, a Handful Pen. Penelope Pd. paid Par. Parish Luftice per, or by day, or Pat. Patience, or Patrick Per C. Per Centum, by the Hundred Parl. Parliament dful Pet. Peter Phil. Philippians, or Philip Philo-Math. Philo-Mathematicus, a Lover of the Mathematics P. M. G. Professor of Music at Gresham College Prof. Tb. G. Profestor of Di-Doctor, vinity at Gresham College Prif. Priscilla a Crum, Pr. Priest, or Prince nory Pf. Pfalm P. S. Postscript Penult. last fave one I ie hael-2. Queen, Query, or Que- U. Use

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Mia.

hion

q. d. quasi dicat, as if he should fay q. 1. quantum libet, asmuch as you please q. f. quantum fufficit, a fufficient Quantity gr. Quarter, or a Farthing R. Reason R. Rex, King; or Regina, Queen. Revo. Reverend. Rev. Revelation Rich: Richard Roht. Robert Rog. Roger Ret. Return Reg. Prof. Pegius Professor Rem. Romans Rt. Honble, Righthonourable Rt. Worp! Right Worthipful St. Saint Sam. Samuel Sect. Section Sept. or 7ber, September Serj, Serjeant Serv. Servant Sb. Shire Salop, Shropshrie Sol. Solution Stoff. Stafford Sp. Spain, or Spanish Sr. Sir s. Semissis, half a Pound S S. T. P. Professor, or a Doctor of Divinity Stew Steward Tho Thomas Theff. Theffalonians The. Theophilus To. Tobias V. Virgin, or Verse Uit.

Ult. wn. when the laft Xn. Christian Ultimus Vid. see X. Chrift Ven. Venerable Xtopher, Christopher Viz. Videlicet, to wit, or that ye. the is to lay yn, then V. gr. Verbi Gratia, for Exym. them ample yt. that Wm. William your ?

W^m. William

W^p. Worship

Wp¹. Worshipful

% et, and
% c. et ceter

Wp¹. Worshipful &c. et cetera, and the rest, W. R. William Rex or, and so forth

And now having finished my Directions concerning Spelling, Pointing, &c. I shall proceed to give some Instructions in relation to the most useful Art of Writing.

When any Person has thoroughly acquainted himself with Spelling, and understands good English, &c. the next Step necessary is the acquiring of the accomplishing Art of fair Writing, to put this Spelling in Practice: In order thereto, I shall endeavour to give such Directions and proper Instructions, as may duly qualify any Person therein.

First, and principally, there must be a fixed Defire and Inclination imprinted in the Mind for its Attainment: For I myself had never acquired or arrived to any Proficiency in it, if I had not had a strong Desire and Inclination to it; arising from being convinced of its excellent Use in Trade, and all manner of Business, according to the Verse.

Great was his Genius, most sublime his Thought, That first fair Writing to Perfection brought, &c.

Next to the Desire, there must be added a steady Resolution to go through with it till it is gained; and, by a diligent and indefatigable Application, overcome all seeming Dissiculties that may arise in the Progress of its Attainment, agreeable to this Distich;

By frequent Use, Experience gains its Growth; But Knowledge flies from Laxiness and Sloth.

DIRECTIONS to BEGINNERS, in WRITING.

I R S T, 'tis necessary to be provided with the following Implements, viz. good Pens, good and free lok, and also good Paper, when arrived to commendable Performances form one Line call gentl particular for its smooth and the These

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formances; likewise a flat Ruler for Sureness; and a round one for Dispatch; with a leaden Plummet or Pencil to rule Lines: Also Gum-Sandrick Powder (or Pounce, as they call it), with a little Cotton dipp'd therein, which rub gently over the Paper, to make it bear Ink the better; particularly when full Hands are to be written, such as Text, &c. and especially when you are obliged to scratch out a Word or Letter: for then there will be a Necessity for its Use; and rubbing the Place with the Pounce, smooth it with the Hast of the Penknise, or clean Paper, and then you may write what is proper in the same Place. These Implements are summ'd up in these Lines:

A Penknife Razor-Metal, Quills good Store; Gum-Sandrick Powder to pounce Paper o'er; Ink, shining black, Paper more white than Snow, Round and slat Rulers on yourself bestow. With willing Mind, these, and industrious Hand, Will make this Art your Servant at Command.

To bold the Pen.

THE Pen must be held somewhat sloping, with the Thumb and the two Fingers next to it; the Ball of he Middle-finger must be placed straight, just against the apper Part of the Cut or Cradle, to keep the Pen steady: The Fore-finger lying straight on the Middle-finger; and he Thumb must be fixed a little higher than the End of the ore-finger, bending in the Joint; and the Pen be for placed, to be held eafily, without griping. The Elbow nust be drawn towards the Body, but not too close. You nust support your Hand by leaning on the Table edge, effing on it, half way between your Wrist and Elbow, not uffering the Ball, or fleshy Part of your Hand to touch he Paper; but resting your Hand on the End of your little-finger, that and your Fourth-finger bending inwards. nd supported on the Table as abovesaid. So fixed, and tting pretty upright, not leaning your Breast against the Table, proceed to the making the small o, and a, c, e, i, m, s, w, and x; which must be all made of equal Bigness nd Height, the Distance or Width betwixt the two trokes of the n, must be the same with the Distance or Vidth of the three Strokes of the m; the same Proportion Width must be observed in the s, w, and o. The Letrs with Stems or Heads, must be of equal Height; as the

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b. d. f. b. k. l. and f. And those with Tails must be of equal Depth, as the f, g, p, q, and f. The Capitals mell bear the same Proportion one to another, with respect to signess and Height, as A. B. C. D. E. F. G. H. and I. & - This Proportion of Letters, both of Small and Great must be observed in, and will serve for, all Hands what. foever. N. B. That all upright Strokes, and those leaning to the Left-hand, must be fine or hair Strokes; and all downright Strokes must be fuller or blacker. And when you are in Joining, where Letters will naturally join, with out any straining, take not off the Pen in Writing, especially in Running or Mix'd Hands. Care likewife muf be duly taken, that there be an equal Distance between Letter and Letter, and also between Word and Word: The distance between Word and Word may be the Space that the small m takes up; but between Letter and Letter, not quite fo much. Sit not long at Writing (that is, no longer than you improve) especially at the first, lest it weary you, and you grow tired of learning. Imitate the best Examples; and have a conftant Eye at your Copy; and be not ambitious of writing fast, before you can write well Expedition will naturally follow, after you have gaineds Habit of writing fair and free; and 'tis much more commendable to be an Hour in writing fix Lines well, that to be able to write fixty Lines in the fame Time, which perhaps will be altogether unintelligible. And besides, by a flow and fair Procedure, you will learn in half the Time; and therefore 'tis a vain Thought in a Learner to defin to be quick before he bath acquired Experience, and Freedom of Writing by frequent Practice. If you have Cotton in your Ink, look well that there be no Hairs the Nib of your Pen. Never overcharge your Pen will Ink; but shake what is too much into the Ink again.

How to make a Pen.

THIS is gained fooner by Experience and Observation from others that can make a Pen well, than by verbal Directions. But Note, That those Quills called Second are the best, as being hard, long, and round in the Barrel and before you begin to cut the Quill, serape off the separation on the Back of the Quill, that the Slit may be the find and without Gander's Teeth (as the Roughness in the Slit

is by afon back Hall half pear Not the 1 your as y Twit that Side. Sides fide o Knife firele Knife finish prope Roug the e that t Bread Lette Text. your it on to hav

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is by some called.) After you have scraped the Quill as aforefaid, cut the Quill at the End, half through, on the back Part; and then turning up the Belly, cut the other Half or Part quite through, viz. about a Quarter, or almost half an Inch, at the End of the Quill, which will then anpear forked: Then enter the Penknife a little in the back Notch, and then putting the Peg of the Penenife-haft for the End of another Quill) into the back Notch, holding your Thumb pretty hard on the Back of the Quill (as high as you intend the Slit to be, with a fudden or quick Twitch, force up the Slit; it must be sudden and smarr, that the Slit may be clearer: Then by feveral Cuts on each Side, bring the Quill into equal Shape or Form on both Sides: and having brought in to a fine Point, place the Infide of the Nib on the Nail of your Thumb, and enter the Knife at the Extremity of the Nib, and out it through a fittle floping: Then with an almost downright Cut of the Knife, cut off the Nib; and then by other proper Cuts finish the Pen, bringing it into a handsome Shape and proper Form: But meddle not with the Nib again, by giving it any Trimming or fine Cuts; for that causes a Roughness and spoils it: But if you do to bring the Nib the evener, you must nib it again as above directed as Note, that the Breadth of the Nib. must be proportioned to the Breadth of the Body, or downright black Strokes of the Letters, in what oever Hand you write, whether Small or Note alfo, That in your fitting to write, you place yourself directly against a fore-night Light, or else to have it on your Left-hand (which I efteem best) but by no means to have the Light on your Right-hand, because the Shadow of your Writing-hand will obstruct your Sight

Thus far for Direction. Now for Application. I have here set Copies of the most usual, fashionable, and commendable Hands for Business; with Alphabets of Great and Small Letters proper to each. Be sure you make your Letters well (both Small and Great) before you proceed to Joining. Be careful in Imitation, and observe the foregoing Directions, and without doubt you will gain your End. Command of Hand, or the Arc of striking Letters, Eve. is

gained by frequent practifing after good Examples.

ABCDEFGHIJKLMN OPÕRSTUVWXYZÆ abcdefghijklmino pqrfstuvwxyz&

tt. 'Tis necessary for all those who would qualify themselves for Busines

A Radd to A blind A Place A prud A virtu A fair I All wo Author All Go A Man A great All evil A prud All you Abund A great A good Affecta All Idle

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A Man All Mis Avoid A Yout A Lad

Copier

Copies in Alphabetical Order.

A

A R T is gained by great Labour and Industry. A A covetous Man is always, as he fancies, in Want. Add to your Faith Virtue, and to Virtue Knowledge. A blind Man's Wife, they fay, needs no Painting. A comely Countenance is a filent Commendation. A Place of ill Example may endanger a good Man. A prudent Man values Content more than Riches. A virtuous Mind is rather to be chosen than Promotion. A fair Piece of Writing is a speaking Picture. All worldly Things run a continual Round. Authority is the main Point in Government. All God's Commandments are divinely pure. A Man's Manners commonly form his Fortune. A great Liar is seldom believ'd though he speaks Truth. All evil Things and vain, strive ever to refrain. A virtuous-minded Youth, will ever love the Truth. A prudent Youth and wife, will not Advice despife. All you that would write well, ftrive others to excel. Abundance ruins some, but Want makes all to moan. Amendment still should shine, in all and every Line. A greater Loss can't be, than that of Liberty. A good and virtuous Lad will frun whate'er is bad. Affectation renders the fairest Face disagreeable. All Idleness avoid, by it most are destroy'd. All idle lazy Boys obttruct their Parents Joys. A Man by Conduct may keep Milery away. All Mishap hath been occasion'd by our Sin. Avoid th' Occasion still, of running into Ill. A Youth that would transcend, must ever mind to mend. A Lad that would excel, must mind his Copy

make clean

tate this Print-hand; to

Bounty is commendable in some, but it ruins others. By a commendable Deportment we gain Reputation. By Delight, and some Care, we come to write fair. By Diligence and Industry we come to Preferment. Beauty without Virtue, is but a painted Sepulchre. Beauty commands some, but Money all Men. By constant Amendment we rise to Preferment. Brave Men will do nothing unbecoming themselves. Be wise and beware; of blotting take care.

C

Bounty

Bounty is more commended than imitated.
By Iniquity and Sin, Misfortunes enter in.
By Idleness and Play, Youth squander Time away.
Barren are those Joys, we waste away in Toys.
Blest are their Joys above, who do their Time improve Badness brings all Sadness, therefore follow Goodness.
By trusting to To-morrow, Men plunge themselves in Son Be wise betimes; shun darling Crimes.

Contentment is preserable to Riches and Honour.
Can they be counted wise, who Counsel do despise?
Care mixed with Delight, will bring us soon to write.
Consider the Shortness of Life, and Certainty of Death.
Contentment is a Gem, beyond a Diadem.
Competency with Content is a great Happiness.

Contention and Strife, make uneasy our Life.
Courtiers receive Presents in a Morning, and forget 'em by
(Night)

Contentment makes a Man happy without a Fortune. Censure no Man, nor detract from any Man,

Deride not Infirmities, nor triumph over Injuries.

Delight and some Care will make you write fair.

Delight in Virtue's Ways, and then you'll ment Praise.

Death conquers potent Princes, and their Powers.

Delight in what you undertake to learn.

Duty, Fear, and Love, we owe to God above.

Death is before the old Man's Face, and may be at the (young one's Back.

Death only can declare, what Dust the Bodies of all Mor-

Drinking is the Drowning of Cares, not the Cure of them. Death defleoys not the Soul, but an ill Life does.

Do to others as you would, that they unto you should.

Delay is the Remora to all good Success.

Deprive no Person of his lawful Due, lest they should do

Delight and Pleasure's but a Golden Dream.

Death is less fear'd by a Fool than a Philosopher.

E

Endless Joys have those, whose Sins are vanquish'd Fors.

Every Plant and Flower, shows to us God's Power.

Examples

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> Fools Fruga Good Grea Good

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Grief Grea Examples oft doth rule the wife Man and the Fool.

Examples oft prevail, when Arguments do fail.

Every idle Thought, to Judgment must be brought.

Every Sluggard is the Cause of his own Misfortune.

Envious Men do fret, when they see others get.

Evil Company makes the good bad, and the bad worse.

Experience is the best Looking glass of Wisdom.

Even at Head and Feet, be sure your Letters keep.

Endeavour to do well, and then you may excel.

Every Man is right, that mixes Profit with Delight.

Evil Men and sly, take care how you come nigh.

Envy and Care make the Body grow spare.

Every money d Man hath others at Command.

Fair Words are often used to hide foul Deeds. Fair Faces have fometimes foul Conditions. Few do good with what they have gotten ill. Future Events must be left to Providence. Fools are rul'd by their Humour, but wife Men by Interest Firm keep your Mind, on Things that are sublime. Fear is a good Watchman, but a bad Defender. Fate will still have a kind Chance for the Brave. Fraud in Childhood will become Knavery in Manhood. Fear without Hope turns to Despair. Faith and Hope are both dead when divided, Fortune is kind at some Hours to all Feign'd Looks oft hide what the false Heart doth knows Fortune and Fame create a great Name. Friends in Advertity are not often found. Fools and Knaves are not Companions for honest Men. Frugality and Industry are the Hands of Fortune.

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YOU

Godliness with Contentment is great Gain.

Good Manners in a Lad, will make his Parents glad.

Great Minds and small Means ruin many Men.

Good Manners, Grace and Truth, are Ornaments in Youth.

Good Men, as well as bad, have sometimes Fortunes ad.

Great Good you sure will find, if you are well inclined.

Good Humour hath never-failing Graces.

God's Works, only, are perfect in their kind.

Gluttony would ransack Noab's Ark for the Riot of a Meal.

Grief nourish'd in your Breast, will never serven test.

Greater Profit doth always come of Learning than of Plan.

Greater Profit doth always come of Learning than of Plan.

The Young Man's best Companion.

Great Men, tho' they shou'd, are not always good. Good Men are safe when wicked ones are at odds. Get what you get honestly, and use it srugally. God is Omnipresent, True, and Almighty.

Hafty Resolutions are seldom fortunate. Hafte makes Wafte of Paper, Ink, and Time. He that stumbles, and falls not, mends his Pace. Honour and Renown will the Ingenious crown. Hypocrites first cheat the World, and at last themselves. Human Life will human Frailties have. Honour that is true, 'tis lawful to purfue. He that fends a Fool of an Errand, ought to follow him. Honours are Burdens, and Riches have Wings. He is a wife Security who fecures himself. He that fins against Conscience, fins with a Witness. Honour the hoary Head, that Virtue's Path doth tread. Happy are their Joys, who turn away from Toys. Hours fly fwift away; improve each Moment in the Day. He that fwims in Sin, must fink in Sorrow. He that fears not an Oath, will not tremble at a Lye. He hath his Work half done, that hath it well begun.

Instruction and a good Education are a durable Portion.

Ignorance is the greatest Enemy to Learning.

In praising sparing be, and blame most sparingly.

Imaginary Toys do please some idle Boys.

Intemperance is attended by Diseases, and Idleness by Want, It is good to have a Friend, but bad to need him.

Idleness and Sloth interrupt Learning's Growth.

Innocency need not sear the Lion, nor the rugged Bear.

It is better to be unborn than untaught.

It's too late to spare, when the Bottom is bare.

Idleness hath no Advocate, but many Friends.

Improvement of Parts, is by Improvement of Time.

If you'd win a Pen of Gold, first learn well the Pen to hold.

It's the Work of an Age to repair the Misconduct of an Hour.

K

Keep a close Mouth, if you'd have a wise Head. Kings, as well as mean Men, must die. Kings may command, and Subjects must obey. Kingdoms and Crowns must in the Dust be laid. Knowledge sublime is gained by much Time. Keep g Keep g Keep G Kings Keep F Keep g

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Keep

Keep at a Distance from Company that's ill.

Keep good Decorum in your Words and Deeds.

Keep close your Intention, for fear of Prevention.

Kings may win Crowns, but cannot conquer Death.

Keep Faith with all Men, and have a Care of a Lye.

Keep good Company, if you'd keep a good Name.

Knowledge if abus'd, is like a Gem ill us'd.

Kingdoms bring Care, and Crowns are heavy Things to (wear.

Keep out evil Thoughts by entertaining good ones.
Kind Actions neglected, make Friendship suspected.
Keep safe good Counsel, and entertain not ill Advice.
Kindle not Passion's Fire, it burns with dreadful Ire.

Learn to live as you would wish to die.
Love and Honour will bear no Rivals.
Learn to unlearn what you have learn'd amis.
Learn now in Time of Youth, to follow Grace and Truth.
Liberty is grateful to all, but destructive to many.
Lying is the Duty of none, but the Custom of many.
Learning do but love, and then you will improve.
Liberality without Discretion, becomes Profuseness.
Let no Jest intrude upon good Manners.
Learn now in youthful Prime, to husband well your Time,
Learn how to make, as well as use a Pen.
Liberality should have no Object but the Poor.
Lost Opportunities are very rarely, if ever, recovered.
Let not the Work of To-day be put off till To-morrow.
Laugh not out of Measure, nor out of Season.

flodesty has more Charms than Beauty.

flonuments of Learning are most durable.

flany know Good, but do not the Good they know.

flake use of Time, now, whilst you're in your Prime.

floney commonly corrupts both Church and State.

flany think not of living, 'till they can live no longer.

flany have repented talking, few of being silent.

flan has much to learn, but a short Time to live.

fleasure not Goodness by good Words only.

flarriage is out of Season, if we are either too Young or too

(Old.)

loft precious Time effeem, which no one can redeem.

ant.

old.

Many live Beggars all their Lives, that they may not die 6 Money makes some Men mad, many merry, but sew sad Many are led by the Ears more than by the Understanding Most precious Things are still posses d with Fear.

Many are made Saints on Earth that never neach Heaven Malice seldors wants a Mark to shoot at.

Missortnne is the Touchstone of Friendship.

Make no Friendship with an angry Man.

Many Things happen between the Cup and the Lip.

Mend your Manners, and that will mend your Fortune.

Many want Help, that have not the Face to ask it.

Momentary and vain, is all earthly Gain.

Nothing is constant in this uncertain World.

Necessity is commonly the Mother of Invention.

Next to a good Conscience prefer a good Name.

None so high can be, as no Mishap to see.

Nothing is so difficult but Diligence may overcome.

No Task's too hard, when Heaven's the Reward.

None can lay himself under an Obligation to do ill.

Never lament or weep, for loss of what you cannot keep.

Noise and Talk without some Rule, do indicate the Management.

Nature feldom changes with the Climate.

Never study to please others, and thereby ruin yourself.

Nature's eldest Law we find, is that we to ourselves be kind.

Opportunity neglected brings severe Repentance.
On present Time depends our future State.
Of all Prodigality that of Time is the worst.
Of what gives most Delight we soonest lose the Sight.
Omitting to do Good, is to commit Evil.
Orators are more solicitous to speak evel than to do so.
Our Sand doth run apace, and soon we end our Race.
Our Life here is but a Journey to the next World.
Our Minds must be cultivated, as well as our Plants.
Other People's Death should be Remembrances of

Our early Care should be to live most piously.

Our Time of Life is call'd a Span, by which observe he [frail is Managed to the content of the call is Managed to the call is the call

One Vice is more expensive than ten Virtues.

Provide Poor Mariento Patiento Pain, I Prayers Put not Pain w Poor F Purfue Paffion

Perfect:

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is best upon a P w book page had in provide against the wonst, and hope for the best. Poor Men want many Things, but coverous Men all. Patience and Time run through the roughest Day. Put to your Tongue a Bridle, that it talk not idle. Pain, Difgrace and Poverty, have frightful Looks. Prayers and Provender hinder no Man's Journey. Put not off the main Business of Life, to the very Article of Pain we can count, but Pleasure steals away. (Death. Poor Freedom is better than rich Slavery. Pursue useful and profitable Studies. Passion and Partiality govern in too many Cases. Told 1217

Perfection in this World is Virtue; and in the next Know-(ledge_

Quick Promifers are commonly flow Performers. Quietness and Content are Mates most excellent. Qualify exorbitant Passions with Quietness and Patience. Quiet Men have quiet Minds, and enjoy Content. Quicken Learning with Alacrity and Delight. Quarrelfome Persons often meet with their Match. Quarrels are more eafily begun than ended Quietness is secure, but Rashness is dangerous. Quietly learn to bear a Cros; if we repine, 'tis to our Loss. Questions in Jest no serious Answers need. Quench Passion's Heat; don't suffer it to reign. Quantity with some is what they'd hit; but Quality prevails. (with Men of Wic.

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Remember your Duty to God, your Neighbour and Your-

Repentance comes too late, when all is confumed. Reason should always guide, and o'er our Acts preside. Reputation should be the Darling of human Affectious. Rest continu'd long, makes Idleness grow strong. Rely on Virtue more than Blood. Repent To-day, To-morrow may be too late.

Reputation is like a Glass, when crack'd it cannot be (mended.

Reputation is gain'd by many Actions, and loft by one. Remember Death, and do not forget Judgment. Religion in Hypocrites is but Skin deep. Relations and Friends purfue their own Ends.

Be-

Religion is best understood when most practised.

Riches serve a wise Man, and rule a Fool.

Run no great Risque for 'vantage small, the' for

Run no great Risque for 'vantage small, tho' some for Mo-

Revenge is a Pleasure only to a mean Spirit.

Righteous Mens Prayers will be regarded.

Repentance is a quite forfaking Sin; but he repents not the

Refolve to amend, and pursue't to your End.

Review the Time you have mif-spent; think upon it, and (lament,

Recreation should fit us for Business, not rob us of Time.

Sin and Sorrow are inseparable Companions. Self-Love is the greatest Flatterer in the World.

Some had rather discharge a Reckoning, than pay a Debt

Sin is the certain first Cause of Missortune.

Study to live quiet, and to do your own Bufiness.

Some in their Zeal are hot, but Knowledge they have not

Set Bounds to Zeal by Discretion.

Silence is the Sanctuary of Prudence and Discretion.

Sloth is an Argument of a mean and degenerate Mind.

Short, and therefore vain, is all earthly Gain.

Soft Words fometimes work upon the proudest Heart.

Sleep and Idleness are Enemies to Learning.

Sin is the Cause of Shame; who love it are to blame.

Small Means and large Minds, ruin many Men.

Short are all Extremes, whether of Good or Ill.

Spend Time in good Duties, and Treasure in good Works

Some go fine and brave, finely to play the Knave.

Six Foot of Earth ends all Distinctions of our Birth.

Some must die, that others may live, said the Grave-digger.

Silly People are commonly pleas'd with filly Things.
Some are full of oral Sanctity, and mental Impiety

Small Profit comes from all ungodly Gain.

Train up a Child in the Practice of Love and good Manners. The End of Mirth is many times the Beginning of Sorrow. Time is so swift of Foot that none can overtake it. Time passeth swift away, no Mortal can it stay. Time passeth swift away, improve therefore each Day. The doing nothing, is very near to doing Evil.

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hose that won't mend To-day, fall have more Work (To-morrow.

he Borrower is a Slave to the Lender; and the Security

rust is the strongest Band of human Society.

The Endowments of the Mind ought not to be confin'd.

Truth may be blamed, but cannot be shamed.

Trust not too far, nor mistrust too soon.

he City cares not what the Country thinks.

o do good is the Way to find it.

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Tis just so much lost as is idly spent.
There is no such Thing in Nature as Perfection.
Time, Tide, and Carriers, will for no Man stay.
The Unfortunate are insulted by every Rascal.

I'is inhuman to fport with another's Infirmities.

V (tend in the contract of

anity makes Beauty contemptible.

ain and transitory is all worldly Glory.

irtue and Fortune work Wonders in the World.

alue more a good Conscience than great Fame.

Inwillingly go to Law, and willingly make an End.

Inderstanding a Thing is half doing it.

ariety is the Happiness of Life.

irtuous and brave Actions gain Reputation.

se soft Words and hard Arguments.

irtue is commended by all, but followed by few.

nthankfulness is the Cause of the Earth's Unfruitfulness, ain Conceitedness is ridicul'd by all.

ntue is feldom a Match for Power.

nderstand Things not by their Form, but Quality.

irtue all commend, but few do it attend.

nion and Peace make Discord to cease.
alour and Greatness are preserr'd before Neatness.

ain and foolish Things, Disreputation bring. irtuous Actions will bring Reputation fill.

hat is more vain than public Light to shun.

hat pleases God must be: none alters his Decree.

e are many times deceiv'd with the bare Shew of Good.
omen and Wine, they smile, they make Menpine.

hen Fortune knocks, be fure to ope the Door. ine is a Turn-coat; first a Friend, then an Enemy.

1541 gi

What is violent is feldom permanent, and the seed

When good Cheer is lacking, our Friends will be packing Wife Men keep their Expences fhort of their Income. We keep a better Account of our Money than our Time

Wickedness in Jest leads us to Wickedness in Earnest

We must not blame Fortune for our own Fruits, out and Where Knavery is in Credit, Honestons put out of Co enstelle für, nor militelt goo, fonn,

We must look to Time past, in improve what's to come What is fixed in our Hear feldom out of our Ho Wickedness comes on by Degrees, anell as Virtue.
Would you be rich, be industrious; if wife the fudious. me, Tide, at Carriers, at for no Man day

Xenothon was a great Captain, as well as a Philosopher Xerxes wept at the Thoughts that his valt Army would (dead in 100 Year

Xerxes whipt the Sea because it would not obey his Co. MUDELO CERTIFICATE IS SEE WORSEN .

Xenophon accounted the wife man happy.

Xenophilus lived without Sickness one hundred and for Wingly go to Lexus and savis

'Xamples of the best for ever mind, and imitate in Kind. Xerxes wept at the changeable State of Man will al visit

'Xamine well how you improve, for that will be as y (your Learning le

A ACT SOFT S.

'Xercife will much Improvement gain.

'Xperience is the Mittress of all Arts and Sciences.

'Xcel in what you can, and firive to lead the Van. 'Xpress your Defire to learn by your Diligence.

Youth is full of Diforder, and Age of Infirmity. Young Men, lament your Minutes mispent. Your Time improve and squander it not away. Your Spelling mind, and Sense of what you write. Yield quietly to what must come unavoidably.

Young Men in Strength should provide against Age

Youth in their Prime, should manage well their Time. Youth to the Grave do go, as well as the Aged do. eld yourfelf Servant to Righteoulness and to Holiness Your Copy mind, write fair, and of blotting beware. Your Care should appear by writing most fair. Your Delight and your Care will make you write him

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bando are del expect t Give wh mitate Learn to Nothing Pleafure Quit all Recomp Silence Time is Use mod Vain ar Wifdom Xenop bo Yesterda

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eal in a good Cause will merit Applause.
eal mixt with Love, is harmless as the Dove.
ealously strive with Emulation to write.
ealously strive for an eternal Crown,
eno was the first of the Stoic Philosophers.
eal without Knowledge is but religious Wild-sire.
accheus he was low, but yet his Faith wa'n't so.
eal if not rightly directed is very pernicious.
ealously bend amain, fair Writing to attain.

Short Lines for Text-Hand.

bandon whatfoever's ill-Be wife betimes. are destroys the Body-Do the Things that are just. expect to receive as you give-Frequent good Company. five what you give chearfully - Have good Men in effects. mitate that which is good-Keep God's Commandments. earn to be wife-Make a right Use of Time. Nothing get, nothing have-Observe Modesty. Pleasures are very short-Pains are very long. Quit all Revenge-Quiet your Passions. Recompense a good Furn-Repent of your Sins. Silence gives Confent Sin very little. Time is more precious than Gold-Turn from your Sine. Use moderate Pleasure-Use not bad Company. Vain are some Pleasures.... Vice is detestable. Wisdom is the principal Thing - Wise Men are scarce. Kenophon and Xenocrates - Zeno and Zenobia. Yesterday cannot be recalled - You cannot take too much

Double Lines in Kerfe.

All you that in fair Writing would excel,
How much you write regard not, but how well.
Bear your Pen lightly, keep a fleady Hand,
And that's the Way fair Writing to command.
Carefully mend in each succeeding Line,
For that's the Way to reach to what is fine.
Descending Strokes are dark, but upwards small;
Even at Head and Feet keep Letters all.
From Blots keep clean your Book; and always mind
To have your Letters all one Way inclin'd.
Grace every Letter with perfect, full and small,
And keep a due Proportion in them all.

Hold your Pen lightly, gripe it not too hard : And with due Care your Copy well regard. Join every Letter to its next with Care. And let the Stroke be admirably fair. Keep a light Hand, and smoothly glide along; Ascending fine, and downward Strokes are strong. Let graceful Beauty in each Line appear, And fee the Front do not excel the Rear. Majestic Grace, both beautiful and strong, Doth, or else ought, to every Line belong. No Roughness at the Edge should e'er be seen; But all the Letters should be smooth and clean. On Care depends the Beauty of each Line. For that alone will make your Art to shine. Praise is deserved by the careful Hand, But for the unthinking doth Correction fland. Quit yourfelf nobly with a prudent Care, Of clumfey Writing, and of Blots beware. Remember strictly what the Art enjoins, Equal-fiz'd Letters, and as equal Lines. Small Letters must of equal Height be seen; The fame of Great, both beautifully clean. Time and Delight will easy make the Task: Delight, Delight's the only Thing I ask! Vain are the Hopes of those who think to gain This noble Treasure without taking Pain. Whilst idle Drones supinely dream of Fame, The Industrious actually do get the same. 'Xemplar Lines are Writing's furest Law, Precepts may lead us, but Examples draw. Youth is the Time for Progress in all Arts: Then use your Youth to gain the noblest Parts. Zeal for Attainment of each Art will prove, One Means of purchasing the general Love.

Since good Ink is necessary to good Writing, I shall give a Receipt or two for making some of the best Black ink in the World, which is as follows, viz.

A Receipt for black Ink.

To fix Quarts of Rain or River Water, (but Rain Water is the best) put one Pound and a half of fresh blue Galls of Aleppo, (for those of Smyrna are not strong enough brush

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AKE and 4 ether fo tle it ur Dr. you bic, in Vermilie m-wate lair-pen porate 1 a clean vith the ious Re e Manr e, Gree s for the d for cu ording 1 can Ha , &c.

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green; also 8 Ounces of Copperas, clean, rocky, green; also 8 Ounces of clean, bright, and clear Gumble; and 2 Ounces of Roche Allum: Let these stand ether in a large Stone-Bottle, or clean Stone-Pot, or then-pot, with a narrow Mouth to keep it free from it; shake, roll, or stir it well, once every Day, and will have excellent Ink in about a Month's Time; and Older it grows, the better it will be for Use.

Ingredients for a Quart.

Quart of Water, 4 Ounces of Galls, 2 Ounces of Copas and 2 Ounces of Gum, mixed and stirred as above.

If you soak the green Peeling of Walnuts (at the ne of the Year when pretty ripe) and Oak Saw-dust, or all Chips of Oak, in Rain Water, and stir it pretty often a Fortnight: the Water strained off and used with the e Ingredients as above, will render the Ink still stronger better.

How to make red Ink.

AKE 3 Pints of Stale Beer, (rather than Vinegar) and 4 Ounces of Ground Brazil Wood; simmer them wher for an Hour; then strain it thro' a Flannel and the it up (well stopped) for Use.

Dr you may dissolve half an Ounce of Gum Senega, or bic, in half a Pint of Water; then put a Pennyworth Vermilion into a small Gallipot, and pour some of the m-water to it, and stir it well, and mix it together with air-pencil, to a proper Confiftency; but it will not inporate presently, but by the next Day it will; then hava clean Pen, dip it into the Ink, having first well stirred with the Pencil, and then you may use it: It is a fine and ious Red, tho' not so free as the other. And after the e Manner, you may make any other coloured Ink, as e, Green, Yellow, Purple, &c. having divers Gallis for that Use. In like manner you may mix the Shellfor curious Occasions, pouring two or three Drops, ording to Direction into the Shell, and mix it well with ean Hair-Pencil, and with it put a little into a clean . Sc. The small Shells may be bought at some Fanri, or Fan-painters, at two or three for Two-pence; or large ones (which are the best) at the Colour-Shops, at -pence a piece.

Il give

To keep Ink from Freezing or Moulding.

IN hard frosty Weather, Ink will be apt to free which, if once it doth, it will be good for nothing it takes away all its Blackness and Beauty. To pre which (if you have not the Conveniency of keepin warm, or from the Cold) put a few Drops of Brandy, other Spirits into it, and it will not freeze. And to der its Moulding, put a little Salt therein.

Familiar Letters on Several Occasions, and on to Subjects.

BEFORE we enter upon Arithmetic, it may be proto to give some Examples of Letters on various Subjected and upon divers Occasions; which Letters frequently over, and sometimes copied, may be a good Introduct to a handsome Style, and a commendable Manner of Wing; besides the Help and Use they may be of in mand observing the Method of Spelling good English, Orthographically placing Great Letters, or Capitals, we they ought to be; and also in imprinting in the Mindue Notion of Points, Stops, &c. and when and what be made.

Letters are variously worded, and ought properly to press the Desires, Thoughts, &c. of the Writer total der, that thereby the Receiver of the Letter may fall derstand, and be justly informed of the Occasions, We

or Intentions of the Sender.

Letters being writ on divers Subjects, and on fundry casions, they may be ranked under these Denomination several Heads following, viz. Letters of Proffered Asset of Thanks, of Excuse, of Reproof, of Advice or Combo Recommendation, of Remonstrance, of Business, and of the ment; Letters Cansolatory, Congratulatory, and Exbortion also familiar and mixed Letters, containing various jests.

I shall not have Room to touch upon every one of particularly; but I shall give fundry Examples promise

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Recei for en receily urs.—I re was the Ren tried it you by fetch r Love Bacon, vite any ofperity

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A Letter from a Son to his Father.

Honoured Father,

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SI have not had a Letter from you, fince your Favour of the 8th of Onober last, which I answered the next Post, I take this Opportunity of enquiring after it Health, and that of my Sitter I have herewith sent you, by Samuel Simple, the Pempley Carrier, a Spaniel g, called Irey; who is an excellent good one of his ad, and fit for the Sport of your Place; is very free for Water; and if he hath any Fault, it is being a little too ter; but he is young, and may be brought to what you ase to have him. Pray give my Love to my Sister, be pleased to accept of my Duty to yourself, who am, adon, Dec. 6.

Sir, your most dutiful Son,

1761. and humble Servant,

Anthony Addlehill.

The Answer.

Pempsey, 28th Xber, 1761. Dear Son. Received your Letter of the 6th Instant, and thank you for enquiring after my Health, which, I thank God, I feetly enjoy at present, as I wish and hope you do urs.-I received your Present of the Dog; but the poor r was almost starved, having (as I suppose) had nothing the Road; but he is now in good Condition, and hath en tried as to his Mettle, which I find to be good. I have t you by the Carrier half a Dozen of wild Ducks, which y fetch'd when I had thot them. Your Sifter remembers Love to you, and hath fent you a Turkey and a Chine Bacon, to which I wish you and your Friends: (if you ite any) a good Stomach. My Prayers to God, for your ofperity, temporal and eternal, are constantly offer'd up Your loving Fathen,

Andrew Addlehill.

P. S. We have a great many ild-Fowl in our Level, fo that a may expect another Present that kind in a little time.

Note, The Letters P. S. signify Poliscript; which Name given to any thing which is (like the above four Lines) rote below the Body of a Letter.

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A Letter from a Young Man to his Uncle.

Honoured Uncle,

THE many kind and courteous Things that you had done for me, oblige me, in point of Gratitude, well as Duty, (as an Opportunity now offers itself) to me a Tender to you of my poor, but real and hearty Service in the Affair between you and Mr. A. B. of this Place And, if you'll please but to communicate to me your tentions, and give me your Directions therein, I will a cute them with all Punctuality; and will, from Time Time, give you an exact Account of my Proceeding therein: Therefore in Expectation of your Comman I remain,

Sir, your most obliged Nepber,

Nerwich, Dec. 7,

and very bumble Servant,

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The Uncle's Answer.

Take the Offer of your Service in the Business, between and Mr. A. B. of your City, very kindly, and the mone fitter to adjust that Affair than yourself; but I am willing to go to Law, and had rather, much rather, to you would endeavour to bring him to some reasonable commodation; for in such Contests the Winner is commonly a Loser in the End. Therefore if you can be him to any reasonable Terms, I shall be very glad: Younderstand the Affair, and so I shall commit it wholly your discreet and good Management, being persuaded you'll do for me as for yourself: In which Opinion I main

Your lowing and affectionate Uncle,

Bazil Bi

A Letter from a Niece to her Aunt.

The Blush, when I think of intruding again on your Goodness; but Necessity, which frequently obliges us to such Actions as are contrary to our Inclinations, is the Motive that induces me to be thus troublesome now. Pray, dear Madam, excuse me, if I once more beg your Assistance, which I do not doubt, but you very well know I stand greatly in need of, at this time; and I shall ever have a grateful Remembrance of your Goodness to me; and I hope I shall be, one time or other, in a Capacity of making some Return for the many Obligations your Goodness hath conferred upon me.

London, Dec. 7.

Your most respectful Niece, and very bumble Serwan', Penelope Pinch.

A Letter of proffer'd Affistance to a Friend.

Dear Friend,

Should be false to true Friendship, if I should neglect or cast off my Friend in Adversity; I have heard that you are under some Missortune, and at present need my Assistance, I therefore send you these Lines for your Conso-

lation, desiring you to bear up against your ill Luck with as much Presence of Mind as you can, for assure yourself, I shall suddenly follow this Epistle in Person, and come, I hope, opportunely enough to your Assistance; 'till which Time, take Courage, and be assured that you shall not be

disappointed of timely Help, from, dear Friend,

Yours in reality, Timothy Timely.

but

A Brother to a Sifter.

My great Distance and long Absence from you (tho' I have not wanted good Company) makes me very solicitous concerning your Welfare: Natural Affection inclines me strongly to have you in Remembrance, tendering your Health and Welfare in every respect as dear as my own; and there is nothing at my Command,

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4, ezit B but if you request, it shall be freely yours. Notwith standing the Distance, I purpose (God willing) to make you a Visit very shortly, and had done it before now, but an urgent Occasion interposed, the Particulars of which being too long for a Letter, I shall acquaint you with when see you. Pray give my due Respects to all Friends, particularly to honest Mr. S. T. and so in expectation of sinding you all well at my Arrival, I conclude,

London, Dec. 6, Dear Sifter,

Your affectionate Brother, and humble Servant, Henry Hearty.

A Letter from a Youth at School to his Parents.

Honoured Father and Mother,

I Received your kind Letter of the 4th of November last, and also the several Things therein mentioned, by the Chichester Carrier, for which I return you my most humble and hearty Thanks, they coming very seasonably to the Relief of my Necessities. — I endeavour to make the best Improvement in my Learning that I possibly can (though at the first it seemed a little irksome and hard) and I hope to gain the Point at last, for which you sent me hither. Pray, dear Parents, accept of my most humble Duty to yourselves, and kind Love to my Brothers and Sister, and to my quondam Playsellows, particularly to Jacky Jinglibrains, and tell him, I hope by this time he begin to be a little serious—I am.

London, Dec. 6, Honoured Parents,
1761. Your dutiful Son, and humble Servant,
Stephen Studious

Another.

Honoured Sir,

I Am very much obliged to you for all your Favour; all I have to hope, is, that the Progress I make in my Learning will be no disagreeable Return for the same: Gratitude, Duty, and a View of suture Advantages, all compire to make me fully sensible how much I ought to labour for my own Improvement, and your Satisfaction, in order to show myself, upon all Occasions, to be

Pec. 8, 1761. Your most obedient Son, Dec. 8, 1761. Daniel Diligent

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A Letter of Recommendation.

If HE Bearer hereof, Francis Faithful, I fend to you as one whose Honesty you may rely on; and my Exerience of his Conduct and Fidelity gives me a certain sind of Considence in recommending him to you; for you now me, Sir, and I believe you cannot in the least think, hat I would recommend any one to you, of whose Proity I had the least Shadow of Doubt or Suspicion. I am, with due Respect,

6 Dec. 1761.

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Sir, your real Friend, and humble Servant, George Generous.

A Letter of Thanks.

Received your Favour, with the kind Present which accompanied it: I have no other Way of expressing my Gratitude at present, than by my hearty Thanks; every thing ou do has a peculiar Excellence, and the Manner of doing t is as agreeable as the Action itself: But I must stop, left should offend that Delicacy, which I would commend,

and which is constantly admired by,

10 Dec. 1761. Sir, your most obliged, and

most bumble Servant,

George Grateful.

To a Country Chapman.

Mr. Francis Fairdealer, London, 8th Dec. 1761.

YOU and I have formerly had Trading together, and it is not my Fault that we do not continue so to do; or assure yourself, I have a great Value and Respect for you, and, on that Account, none shall be more ready to obage you in what I may; therefore pray let us once more e-assume our Dealings together; and you shall find, that or any Goods you have Occasion for in my Way, none half use you more kindly than,

Your real Friend and bumble Servant, Titus Tradewell.

A Letter of Congratulation.

S I am perfectly fincere in the Profession of Friend Thip which I have conftantly made to you, you w certainly believe that I am sensibly rejoiced at your la good Fortune; as your Merit gave me occasion to foreign it, long before it happened, fo I was not at all surprized a hearing thereof; I heartily with you greater Success, an beg that you will always continue me in the Number of those whom you permit to subscribe themselves, as I nor

London, April 2, 1761.

Sir, your most obedient and most faithful Servant, Ralph Real

A Letter of Enquiry of Health.

Hammersmith, 9th of Octob. 1761

SIR, TOT hearing from you in fuch a length of Time: from the 11th of June last, I am concerned, k Sickness, or some other Accident, hath happened to you or to some one of your Family; my Uneasiness occ. fions my giving you this Trouble, and I wish that I me find things with you better than my Fears fugget however, be pleased to let me know the Certainty will all convenient Speed; and thereby you'll very much of lige,

Your real Friend, and very bumble Servant, Peter Pitiful

A Letter by way of Petition to a Friend.

Honoured Sir.

Am uncertain whether my late Misfortunes have co to your Knowledge; however I most humbly presum on your Good-nature, being affured by fundry Example! your Compassion, that you will think of and take pity the Distressed; therefore as an Object truly delerm Compassion, I most humbly implore and petition you confider the many Losses and Disappointments that I in

ately in ous Ci Affairs : o I wa nd the ances ortune, o Pove erofity Il Hun Offices

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- Dear

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ately met with, which have reduced me to such necessions Circumstances, that I cannot possibly proceed in my Affairs: You was pleased once to stile me your Friend, and I was indeed; and so I would most certainly be now, and shew it by a signal Proof of Kindness, if our Circumsances were changed, by standing between you and Misortune, and screening you from the Contempt incident of Poverty and Distress. I doubt not, Sir, but your Generosity and Goodness is as great; and I hope, with all Humility, you will be pleased to interpose your good Offices between Ruin and, Sir,

Your very bumble Servant,

Lawrence Luckless.

A Letter of Friendship.

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I T is now a long Time (as I account it) fince you and I have had any mutual Converse by Letter, which to me is a great Unhappiness; and really; if Distance did not omewhat excuse, I should be apt to tax you with Unkindess; but however, perhaps you may not have the same Conveniency of Writing at your Place (for want of Postage) is we have at ours, and on that account, I shall not insist on it as an Infringement of Friendship, the chief Purport of this being to enquire of your Welfare, and to have in Answer given to,

Your real Friend, and very bumble Servant, Kendrick Kindly.

A Letter of Business.

OURS of the 25th ult. is now before me; in answer to which, I positively declare, That Mr. A. B. hath not been with me, to present the Bill of Exchange that you mention in your Letter of Advice to me, and therefore there can be no just Cause of Protest, or any other Charge, out on,

Landon, May 1,

Your bumble Servant,

John Innocent.

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It

It is as proper to know how to subscribe, and how direct, as it is to write a Letter.

SUPERSERIPTIONS.
To the King's most Excellent Majesty.
To the Queen's most Excellent Majesty, &c.
To the Prince, To his Royal Highness, &c.
To the Princess, To her Royal Highness, &c.

To Archbishops,

To his Grace the Lord Archbishop of Canterbury; or, To the most Reverend Father in God, &c. To Bishops,

To the Right Reverend Father in God, &c.
To Deans, Archdeacons, &c.
To the Reverend A. B. D. D. Dean of W.

To the Inferior Clergy,

To the Reverend Mr. A. &c. or To the Reverend Dostor, &c.

To the Great Officers of State.

To the Right Honourable R. Lord H. Lord High Chancelle of Great-Britain. — Lord President of the Council. — Lord Privy Seal. — One of his Majesty's principal Secretarius State, &c.

To Temporal Lords.

To his Grace the Duke of, &c. To the Most Honourall the Marquis of, &c. To the Right Honourable the En of, &c. To the Right Honourable the Lord Viscount, &c.

To the Right Honourable the Lord, &c.

The eldest Sons of Dukes, Marquises, and Earls, as joy, by the Courtesy of England, the second Title belonging to their Father; thus the eldest Son of the Duke of Bedford is called Marquis of Tavistoc; of the Duke of Grafton, Earl of Euston; of the Earl of Macclessfield, Lond Viscount Parker, &c. and their Daughters are all called Ladies, with the Addition of their Christian and Surnames, thus, Lady Carolina Russel, Lady Augusta Fine roy, Lady Betty Parker, &c.

The younger Sons of Dukes are in like manner called Lords; and those of Marquises and Earls, together with all the Children of Viscounts and Barons, are stiled in

nourable.

To a Baronet, Honourable: To a Knight, Right We shipful, and to an Esquire, Worshipful—Every Privy Consellor, the not a Nobleman, hath the Title of Right hourable. All Ambassadors have the Stile of Excellum

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as hath also the Lord Lieutenant of Ireland, and the Captain-General of his Majesty's Forces. The Lord Mayor of London, during his Mayoralty, hath the Title of Right Honourable. And the Sheriffs, during that Office, have the Title of Right Worshipful. All Mayors of Corporations have the Title of Esquires, during their Office.

For the Beginning of Letters, To the King; Sir, or, May it please your Majesty.

To the Queen; Madam, or May it please your Majesty.
To the Prince; Sir, or May it please your Royal Highness.
To the Princes; Madam, or May it please your Royal

Highness.

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To a Duke; My Lord Duke, or May it please your Grace. To a Duches; Madam, or May it please your Grace.

To an Archbishop ; May it please your Grace.

To a Marquis; My Lord, or, May it please your Lordship. To a Marchioness, Madam, or May it please your Lad ship. To an Earl, Viscount, or Baron; My Lord, or May it

please your Lordship.

To their Conforts; Madam, or May it please your Ladyship:

To a Bishop; My Lerd, or May it please your Lordship. To a Knight; Sir, or May it please your Worship.

To his Lady; Madam, or May it please your Ladysbip.

To a Mayor, Justice of Peace, Esquire, &c. Sir, or May it please your Worship.

To the Clergy; Reverend Sir; Mr. Dean; Mr. Arch-

deacon; Sir, &c. as Circumstances may require.

At subscribing your Name conclude with the same Title you began with; as My Lord, your Lordship's, &c.

To either House of Parliament, and to Commissioners,

Bodies corporate;

To the Right Honourable the Lords Spiritual and Temporal in Parliament assembled.

To the Honourable the Knights, Citizens, and Burgeffes, in

Parliament affembled.

To the Right Honourable the Lords Commissioners of the Treasury or Admiralty.

To the Honourable the Commissioners of his Majesty's Cuf-

toms ;- Revenue of the Excise, &c.

To the Right Worshipful the Governors of Christ's Hospital, London.

To the Master, Wardens, and Court of Assistants of the Worshipful Company of Drapers.

DA

Of

Of Secret Writing.

HERE it may not be improper to fay fomething of Secret Writing; to which Bishop Wilkins, in his Book of Mathematical Magic, speaks largely; but it is principally concerning Writing in Cypher, which require great Pains, and an uncommon Share of Ingenuity, both in Writers and Readers. But however I shall shew two or three particular Ways, that are very pretty and amusing, and also very easy, both as to Cost and Pains. And,

First, If you dip your Pen in the Juice of a Lemon, or of an Onion, or in your own Urine, or in Spirits of Vitriol, and write on clean Paper whatever you intend, it shall not be discerned till you hold it to the Fire, and then it will appear legible. And if with any of the aforementioned you write on your Skin, as on your Arm, and Back of your Hand, &c. it shall not be feen till you burn a Piece of Pa. per, and with the Ashes rub on the Place, and then it will appear very plain: And this I have experienc'd and try'd, and therefore can fay, Probatum est.

Another Way is, when you write a Letter that you intend it shall not be discovered, but to those you think fit, first to write your Thoughts on one Side of your Letter with black Ink, as usual, (but it ought to be on thin Paper) and then, on the contrary Side, go over the faid Matter that you would have fecret, with a clean Pen dipp'd in Milk, and that Writing shall not be read without holding it to the Fire, as mentioned above, and then it will ap-

pear legible in a bluish Colour.

A third Method is, to have two Pieces of Paper of equal Size, and the uppermost cut in chequered Holes or Squares big enough to contain any Word of fix or feven Syllables, and in those Squares write your Mind in regular Sense; and then take off the faid chequered Paper, and fill up the Vacancies with Words of any Kind, which will render it perfeet Nonsense, and not capable of being read, to any Purpose of Intelligence. And transmit and fend the said uppermost, or chequered Paper, or another exactly of the fame Form, to your Correspondent; whereby he shall, by laying it nicely on your faid Letter, read your intended Sense, without being perplexed with the Words of Amusement intermixed, which make it altogether unintelligible.

Or, again, you may write to your Friend in proper Sente with common Ink, and let the Lines be at so commodious

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a Distance, that what you intend to be secret may be written between them with Water wherein Galls have been steeped a little Time (but not long enough to tincture the Water) and, when dry, nothing of the Writing between the said Lines can be seen; but when it is to be read, you must, with a fine Hair Pencil dipp'd in Copperas Water, go between the said Lines, and so you make it legible.

Note, This Way will give no Ground for Suspicion, because the Letter seemeth to carry proper Sense in those

Lines that are set at such a proper Distance, &c.

Of ARITHMETIC.

A FTER Writing, the next necessary Step towards qualifying a Person for Business, is the understanding that truly laudable and most excellent Accomplishment, the noble Science of Arithmetic, a Knowledge so necessary in all the Parts of Life and Business, that scarce any thing is done without it.

In my Directions for its Attainment, I shall proceed with such Plainness of Method, and Familiarity of stile, as shall render it easy to be understood, and conspicuous to the

meanest Capacity.

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And first of Notation and Numeration.

In Notation, we must note or observe, that all Numbers are expressed by, or composed of, these ten Figures, or Characters following, viz

One, Two, Three, Four, Five, ix, Seven, Eight, Nine, Cypher.

Nine of these are called fignificant Figures, to diftinguish them from the Cypher, which of itself fignifies nothing; but as it is placed (in whole Numbers) ferves to increase the Value of the next Figure or Figures that stand before it; as 3 is but Three; but before the Cypher thus, 30, the 3 becomes. Thirty, &c. But in Decimal Fractions, (o) decreases the Value of the Figure behind it, for, therein, 3 is three Tenths of any Thing; but by placing o before it thus, 03. it is decreased from 3 tenth Parts to 3 hundredth Parts of any Thing. &c .- We are to note, That every one, or any of the abovementioned nine Figures or Digits, have two Values; one cerrain, and another uncertain; the certain Value is, when it stands alone by itself; the uncertain is, when joined or placed with other Figures or Cyphers; DS for

for when any one of these Figures stands alone, they figures no more than their own fimple Value; as 5 is but Five, 4 but Four, 6 but Six, and 3 no more than Three, &c. And this is the certain Value of a Figure: But when another Figure or Cypher is annexed, they then are increased in their Value ten Times; as 5, or 5 Units, or Ones, to 5 Tens of Fifty; 4 to 4 Tens or Forty; 6 to 6 Tens or Sixty; and to 3 Tens or Thirty; as thus, 51, Fifty-one; 42, Fortytwo; 63, Sixty-three; 34, Thirty-four, &c. Again, if any of the faid Figures stand in the third Place towards the Left. hand, they fignify fo many Hundreds as they expressed Units or Ones; as 500 is Five Hundreds, 400 Four Hundreds 600 Six Hundreds, and 300 Three Hundreds, &c. If any of them possess the 4th Place towards the Lest-hand, they are fo many Thousands as they contain Units: And so any, or every Figure, increases by a Ten-fold Proportion, from the Right hand, to the Left, according to the Place it is found or stands in; fo that 5 may be either Five, or Fifty; Five hundred, or Five thousand: In the first Place, 5; in the second, 50; in the third, 500; in the fourth Place, 5000, &c. The true Value of Figures in Conjunction, may be fully learnt and understood by the following Table.

The Numeration Table.

Lisic Thouf. of M.	Thoul. of M.	houf of Mil.	of Millions.	ens of Mull.	Aillions.	of I hour.	ens of I houf.	houlands	Inndreds	ens	nits	Thouf. of Millions	Millions	Thoufands	Units or Ones	The second secon
17		0	6	00	7	9	30	4	3	2	-	-4-	× X	F	5	
1	2	3	4 3 2 1	5	6	76	8	9	0	1	2109876543	123	456	789 678 567		
		1	2	3	1	5	6	7	8	9	0	1	234	567	.800	1
			1	2	3	4	5	6	7	8	0 98 76 5 432		123	456	789	20110
	- 1		34	1	2	3	4	5	6	7-	8		123	345	678 567	100
	1.00				3	2	3	4	5	6	7		1	234	507	1
						1	2	3	4	5	6			123	456	
			-				.1	2	3	4	5		-	12	345	1
16.								1	2	3	4			. 1	234	
						J,			1	2	3			4 4 1	123	
	×				3					1	2	- h -	9		456 345 234 123 12	1
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For the easier Reading of any Number, first get the Words at the Head of the Table by-heart; as Units, Tens, Hundreds, Thousands, &c. and apply them thus, 75, five Units, Five; and 7 Tens, Seventy; that is, Seventy-five. Again, 678; 8 Units, Eight; 7 Tens, Seventy; and 6 Hundreds. fix Hundred; that is, Six-hundred Seventy eight. Once more, 3456; 6 Units, fix; 5 Tens, Fifty; 4 Hundreds, Four-hundreds; 3 Thousands, Three-thousand; together, Three-thousand Four-hundred Fifty-fix. The 4th Line of the Table, viz. 123456789, may be read thus, One hundred twenty three Millions, four-hundred fifty-fix Thoufand, seven-hundred Eighty-nine. But the Manner of reading any Number may be rendered more intelligible by Stops, thus; make a Comma after every third Figure or Cypher, beginning at the Right-hand, and fo on towards the Left, thereby diffinguishing every third Place into Hundreds, as Hundreds of Units, Hundreds of Thoufands, Hundreds of Millions, and Hundred Thousands of Millions, &c. And for Trial, let's read the first Line of the Table; where the last Place in Valuation is Hundred Thousands of Millions, and being pointed into Periods, will fland thus, 123,456,789,012; and is to be read thus, One-hundred twenty-three Thousand, four Hundred fifty-fix Millions, feven Hundred eighty-nine Thousand (no hundreds) and Twelve. Again, the following Number, viz. 276,245,678,921,460; is to be read thus; 2-6 Millions of Millions, 245 Thousands of Millions, 678 Millions, 921 Thousands, 460 Units or Ones; that is, two hundred sevency-fix Millions of Millions, two hundred forty-five thousand fix hundred seventy-eight Millions, nine hundred twenty-two thousands four hundred and fixty. The foregoing Table of Numeration is on the Right-hand, diflinguished into such Periods, for the easier reading thereof; and the like is frequently done in the public. Offices, and by Men of Bolinets.

Numbers to be read or written, viz.

96, Ninety-six.
242, Two hundred forty-two.
7924, Seven thousand 9 hundred 24.
54006, Fifty-four thousand and six.
524707, Five hundred 24 thousand 707.
4706240, Four millions 706 thousand 240.
62700472, Sixty-two millions 700 thousand 472.
474960204, Four hundred 74 millions 960 thousand 204.
4214007042, Four thousand 214 millions 7 thousand 42.
44214800240, Forty-four thousand 214 millions 8 hundred thousand 240.

Of Numerical Letters.

Numbers were antiently expressed by Letters; and it is necessary to understand them, for the readier reading the Dates of Years, frequently used in the Title-Pages of Books, on Funeral Monuments, in Roman History, &c.

I fignifies One.
V Five.
X Ten.
L Fifty.
C An Hundred.
CC Two Hundred.
D or ID Five Hundred.
M or CID A Thousand.
IDD Five Thousand.
SCIDD Ten Thousand.
IDD Fifty Thousand.
CCCCIDDDD A Hundred
Thousand.

IDDDDD Five Hundred
Thousand.
CCCCCIDDDDD Ten Hun-

dred Thousand, or a Million.

M.DCC.LXI. expresses this present Date of 1761. M. being One Thousand D Five Hundred, CC Two Hundred, and LXI Sixtyone; together One Thousand Sewen Hundred and Sixty-one.

When a Letter of inferior Value stands after one of superior, its Value is to be added thereto; thus VI, VII, and VIII, signify Six, Seven, and Eight; but when a Letter of inferior Value is placed before one of superior, then its Value is to be taken therefrom, thus IV, IX, XL, and XC, signify Four, Nine, Forty, and Ninety.

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ADDITION

I S the putting together two or more Numbers or Sums, fo as their total Value may be discovered or known.

Herein we must always observe to set the Numbers to be added, orderly one under the other; that is, Units under Units, Tens under Tens, Hundreds under Hundreds, &c. as in the subsequent Examples.

Addition of Numbers of one Denomination.

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24		750		57962
4 2		4 3 2		39744
68		5 7 8		67222
86		696		79674
2 4		6 7 8		2492
4 2	1000	678		390
286		3 5 6 2	14	247484

In Addition of fimple Numbers, whether it be Tardi, Gallons, Pounds, or any Thing else, remember to carry 1 for every 10 that you find in the Right-hand Row or Rank of Figures, being Units, to the next Row of Tens; and the like from the Rank of Tens to the Row of Hundreds, &c. and whatever it makes in the last Row, you must set down, amount to what it will.

The Numbers above are set down in Order, as before directed; that is, Units under Units, Tens under Tens, &c. as may be plainly understood, by being indicated at the Head of each Row or Rank, by U, T, H, &c. signifying Units, Tens, Hundreds, &c. Then in casting up each Example, to know its Total, I begin at the Righthand, or Unit's Rank, of the first Example, and say 2 and 4 is 6, and 6 is 12, and 8 is 20, and 2 is 22, and 4 is 26; in which Row there are two Tens and 6 over; wherefore I set down 6 just under its own Rank, and carry 2 to the next Row, and say, 2 that I carry and 4 makes 6, and 2 is 8, and 8 is 16, and 6 is 22, and 4 is 26, and 2 is 28; and this being the last Row, I set down the Amount, viz. 28; so that the Total Number of Yards is found to be

286. And the Amount of the next or 2d Example is found by the same Method to be 3562 Gallons. And in the thin and last Example, the Total Number of Pounds is found by the same way to be 247484. And so the Total of any other Example of the same kind, viz. simple Numbers of one Denomination may be found. Note, That when any of the Ranks amount to just 10, 20, 30, 40, 50, 60, then you must set down the o under its proper Rank, and carry either 1, 2, 3, 4, or 5, according to the Number of Tens that you find, to the next Row.

And so much for Addition of Numbers of one Denomination, which never varies from what has been said above; observing strictly to keep to the critical, and nicely setting down in perpendicular Order your several Numbers, that Units may precisely and directly stand under Units, Ten under Tens, &c. as hath been fully declared before. The next in Order of Course, is Addition of Numbers of several

Denominations; or Addition of Money.

In England, or Great Britain, Accounts are kept in Pounds, Shillings, Pence, and Parts of a Penny; so you at to note, that

4 Farthings make 1 Penny. 12 Pence 1 Shilling, and 20 Shillings 1 Pound.

In adding of these you are with the same Punctuality to mind, that Pounds be set directly under Pounds, Shilling under Shillings, Pence under Pence, and Farthings under Farthings; as in the Examples hereaster following.

But before you proceed, it will be necessary to have the following Tables by Heart, for the readier Remembrance of how many Shillings there are in a Number of Pence, and how many Pounds are contained in a Number of Shillings there are a shillings the are a shillings the are a shillings the are a shill are a shilling the are a shillings the are a shi

lings, &c.

Note, That 1. stands for Pounds, s for Shillings, d for Pence, and qr. for Farthings, those being the initial Letters of Libra, Solidus, Denarius, and Quadrans, Lain Words of the same Signification.

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I begin with the Right-hand Rank, that is the Pencein Example of Money owing, and fay 4 and 3 is 7, as is 13, and 7 is 20, and 9 is 29, and 6 makes 35 Pen now 30 Pence, according to the Table is 2 s. 6 d. and more makes 23. and 11 d I fet down 11 exactly in the Rank of Pence, and fay, 2 Shillings that I co (which I do to the Rank of Shillings) and 5 is 7, and o. (for I take first only the Units Rank of Shillings) and 15, and 7 makes 22, and 2 is 24, and 6 is 30, and 2 m 32; and now being come to the Top of the Sum, and making 32, I come cown with the Tens of Shillings, ing 22 and 10 is 42, and 10 is 52, and 10 is 62,1 10 is 72, and 10 makes 82 Shillings; and the Table! ling me that 80 Shillings is 4 Pounds, I know therefor 82 s. is 4 l. 2 s. wherefore I fet down the odd 2 s. juft der the Row of Shillings, and carry 4 Pounds to Pounds; faying, 4 that I carry and 5 is nine, and 6 is 15,1 4 is 19, and 5 is 24, and 6 is 30, and 4 is 34, and 7 is and 4 makes 45 Pounds; fo that the Total of those fever Sums of Money, due to the several Persons, amount 45 l. 25. 11 d.

In the Example of Money received, I begin at t Right-hand Rank as before, and fay, 6 and 4 is and 3 is 13, and 9 makes 22; and 22 Pence being 10 d. I fet down 10, and carry 1 s. to the Shilling faying I that I carry and 2 is 3, and 7 is 10, and 6 is 1 and 2 is 18, and 8 is 26, and 6 makes 32; then I com down with the Tens, faying, 32 and 10 makes 42,50 and find at the Bottom it comes to 102 Shillings, while makes 5/ 25. I fet down 25. and carry 5 1. tot Pounds; faying, 5 that I carry, and 4 is 9, &c. In that at the Top it amounts to 36, whereof I fet down 60 actly under its own Rank, viz. the Rank of Units Pounds, and carry 3 for the 3 Tens that are in 30, for all Times in the Addition of the Left-hand Denomination whether it be Money, Weight or Measure; that is, the Denomination of Pounds, Tons, or Yards, you'mi for every Ten, carry one to the next Row, &c. saying 3 that I carry, and 6 is 9, and 2 is 11, and 8 is 19,04 and I find that at the Top it comes to 49; wherefore I down 49 to the Left-hand of the 6; and the Total Amon of the Money received for those particular Goods or Wan

fold, is 496 l. 2 s. 10 d.

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	1. s. d.	1. 1.	
(Mr. Money	17 12 6	146 12	31 4 10 6
Mr. Gaunt	26 10 2	287 10	9 0 07 9
Mr. Hern		46 16	6 1 00 0
	44 12 81	100 00	0 1010
	60 14 0	72 12	
	29 16 63	69 16	
	16 10 0	460 12	6 . 4 14 4
	r 20 00 0	49 10	0 07 6
	27 11 41	7 12	0 01 6
	15 17 04 0	22 10	
Mr. Quinto		164 12	9 3 10 9
Mr. Roper	46 16 8	75 10	
Total	377 18 3	1494 16	63 18 00 4
	-	-	

Addition of Avoirdupois Weight.

By this Weight are weighed all Kinds of Grocery Goods wares, or Goods subject to waste: as Tobacco, Sugars, fruit and Drugs, as also Flesh, Butter, Cheese, Allum, allow, Iron, Brass, Copper, Lead, Tin, or Pewter, Pitch, ar, Rosin, Hemp, Flax, Soap, Salt, &c.

A Table of this Weight is as follows, viz.

	make I Dram	Marked dr.	
16 Drams 1	Ounce	02.	100 1 VO
16 Ounces 1		16.	es to stought do
Weight	qr. of a hundred		THE THE
4 Quarters 20 Hundred	1 Hundred Wt. Wt. 1 Tun	C. T.	
C. qrs. 1b.	10 4 28 C. qrs. lb.	C. grs. 1b.	10 16 16 lb. oz. dr.
5-1-16	24-1-12	9-1-16	24-11-12
1-2-24	42-2-00	4-3-26	42-14-15
6-3-06	16-1-12	7-1-00	64-10-11
7-1-12	25-3-24	5-3-27	29-09-10
0-20	19-0-20	4-3-02	16-12-13
5-2-00	26-1-22	2-2-02	27-12-14
9-3-22	154-1-06	24-2-15	206-00-11

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In these Examples, the Manner of proceeding is the same, as in the former, observing, that the Number of Units of each lesser Denomination, which make an Unit of the next greater, found by the preceding Table, i placed above each Rank of Numbers; that is to say, in the first Example, 28 the Number of Pounds contained in a Quarter of an hundred Weight, is placed over the Column of Pounds; now that Column, when added un makes 78, which contains two 28's and 22 over, where fore I set down 22 under the Column of Pounds, and camp 2 to the Column of Quarters, and so on.

Note, That in weighing at the Water-side, or ellewhere, they do not weigh by the Tun, though som Goods are sold by it, as Iron, Logwood, Cheese, &c. but by the Hundreds, Quarters, and Pounds, which are also

wards reduced to and computed by Tuns.

Addition of Troy Weight.

By this Weight are weighed, Jewels, Gold, Silva Pearls, and Medicines, and the usual Denominations in Pounds, Ounces, Penny-weights, and Grains, as in the following Table, viz.

24 Grains make 1 Penny-weight. 20 Penny-weights 1 Ounce, and 12 Ounces 1 Pound Troy.

Examples of Troy Weight.

10 12 20 24	12 20
	02. pw.
14 06 10 11	204 10
24 10 11 12	96 07
21 06 07 17	100 11
22 10 12 14	56 16
16 11 12 13	212 10
21 07 06 17	96 191
	24 10 11 12 21 06 07 17 22 10 12 14 16 11 12 13

28 06 00 12 - 122 05 01 12 - 767 17

If what was before faid be duly observed, the Performance of the above Examples will be attended with no Disculty.

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4 No. 4 qr 5 qr 3 qr 6 qr.

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How to prove Addition.

Numbers of one Denomination; or in Examples compound, that is of divers Denominations, as Pounds, Shillings, Pence, and Farthings, &c. the readiest Method of Proof, is to cast the same downwards (beginning at the Top as you did the same upwards, beginning at the Bottom) and if that Operation produces the same Total, the Work is infallibly right, and beyond any Contradiction; and this is much better and more feasible than the common Method used in Schools, of making two Totals, by omitting the upper Line in the Second. I might here also give several Examples of other Additions, such as Apothecaries Weight, Cloth, Liquid, Dry, and Long-Measures, Time, &c. but the Method serves for any of them, having respect to the Tables belonging to those several Denominations, which are as follow, wiz.

A Table of the Parts of Apothecaries-Weight.

Marks.

20 Grains 1 Scruple. Da Scruple. 3 Scruples 1 Dram. 3 a Dram.

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3 Scruples 1 Dram. 3 a Dram. 8 Drams 1 Ounce. 3 an Ounce.

12 Ounces 1 Pound. To Pound.

By these Weights they compound their Medicines; but they buy and sell their Drugs by Avoirdupois-weight.

Cloth-Measure.

4 Nails, or 9 Inches. 1 gr. of a Yard.

4 grs. or 36 Inches. 1 Yard.

5 qrs. or 45 Inches. i Ell Englist.

3 grs. or 27 Inches. 1 Ell Flemifb.

6 grs. or 54 Inches. 1 French Ell.

A Table of Wool-Weight.

Note, 7 lb. make 1 Clove; 2 Cloves, or 14 lb. 1 Stone; 2 Stones, or 28 lb. 1 Todd; 6 Todd and \(\frac{1}{2}\), 1 Wey, or 182 lb. 2 Weys, or 364 lb. 1 Sack; and 12 Sacks 1 Laft, or 4368 lb. 240 lb. 1 Pack of Wool.

Note, That 1 lb. 2 oz. 12 pw. Troy, is equal to a Pound Avoirdupois. And a Pound Troy is about 13 oz. 2 Drams

and a half Avoirdupois.

A Pound Weight Troy
A Pound Wt. Awardupois of Silver is worth \{ 3 02 2
3 15 3\frac{1}{2}
100%

in Gold weighs { 1 113/4 } Avoird. W. in Silver

A Pound Avoirdupois is heavier than a Pound Troy: But an Ounce Troy is heavier than an Ounce Avoirdupois.

A Table of Liquid Measure.

Liquid Measure is of two Sorts, viz. one for Wine, Brand, &c. and the other for Beer and Ale.

Wine, &c.

8 Pints 1 Gallon 2 Hogsheads 1 Pipe or But 42 Gallons 1 Tierce 2 Pipes or Butts 1 Tun, or

53 Gallons i Hogshead 252 Gallons. 84 Gallons 1 Puncheon

Note, That fweet Oil Bath 236 Gallons to the Tun: But Oil from Greenland hath 252 Gallons to the Tun.

Note, The Wine Gallon contains 231 Cubic or Solid Inches, by which all Liquids are measured, except Ben and Ale.

Beer Meafure.

8 Pints I Gallon 2 Kilderkins I Barrel, or 16 Gallons Gallons 1 Firkin

1 Barrel and half, or 54 Gal-2 Firkins 1 Kilderkin lons, 1 Hogshead.

Ale Measure.

2 Kilderkins 1 Barrel, or 32 8 Pints r Gallon 8 Gallons r Firkin of Ale, Gallons

I Barrel and half, or 48 Gal-Soap, or Herrings. lons r Hogshead 2 Firkins 1 Kilderkin

Note, The Beer and Ale Gallon are the fame, viz. 281 folid Inches; but with this Difference, i. e. the Barrel of Beer contains 1228 Cubic Inches, or 4 Gallons more than the Barrel of Ale.

In a Tun of Wine are In a Pipe or Butt are 2 Pipes or Buts 2 Hogsheads 6 Tierces Tierces 252 Gallons 126 Gallons 504 Pottles 252 Pottles 1008 Quarts" 504 Quarts 2016 Pints

1008 Pints

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68

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1, or 32

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In a Puncheon are	4 Firkins
	g6 Gallons
68 Pottles	72 Pottles
26 Quarts	144 Quarts
72 Pints Pints	288 Pints
In a Hog shead are	In a Barrel of Ale are
62 Gallons	2 Kilderkins
26 Pottles	4 Firkins
	32 Gallons
	64 Pottles
In a Barrel of Beer are	128 Quarts
	256 Pints
The state of the state of	min lime him a second to se
Control of the contro	Salt and San Coal
	In a Puncheon are 84 Gallons 68 Pottles 36 Quarts 72 Pints In a Hogshead are 63 Gallons 126 Pottles 122 Quarts 134 Pints In a Barrel of Beer are 2 Kilderkins Dry I

Dry M	eafure.
Pints I Quart	Salt and Sea-Coal are
Quarts 1 Pottle	heaped, or else there are
Pottles 1 Gallon	5 Pecks to the Bushel.
Gallons 1 Peck	In the Last are
Pecks & Bushel Land Mea-	2 Weys
fure	10 Quarters
Pecks Bushel Water Mea-	80 Bushels
fure	320 Pecks
Bushels 1 Comb, or half	1280 Pottles
Quarter	2560 Quarts
Combs 1 Quarter	5120 Pints
Quarters 1 Chalder	In a Wey are
Quarters 1 Wey	5 Quarters
Weys Laft, or 10 Quarters	40 Bufhels
Fatts or Vatts, or 36 Bu-	160 Pecks
shels, of Sea-Coal, 1 Chal-	320 Gallons
der; and 21 Chalder is	640 Pottles
accounted a Score in the	1280 Quarts
River Thames.	2560 Pints
Note By an AA Anna 171	2, the Bushel is 2178 Cubic
Inches and a Gallon of this N	leasure is 272 Lubic Inches.
and a Canon or this to	2001010 10 2/ 14/ - 15/5 - 110/1001

Long Meafure.

Fathom or 2 Yds. or 220 Yards, 1 s 1 Mile, or 1760 League

In a Mile are

8 Furlongs 320 Poles 1760 Yards 5280 Feet 63360 Inches 190080 Barley Corns re in t

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Land Measure.

5 Yards and half, I Pole, Perch, or Rod.

40 Poles make I Furlong, or Quarter of an Acre. 160 Poles in Length, and I in Breadth, is one Acre.

80 Poles in Length, and 2 in Breadth, 1 Acre; and 40 Poles in Length, and 4 in Breadth, 1 Acre.

4 Poles in Length make I Chain,

10 Chains in Length, and 1 in Breadth, make 1 Acre

Time.

60 Seconds 1 Minute 60 Minutes 1 Hour

24 Hours I natural Day

In a Year are,

7 Days I Week 4 Weeks I Month 525960 Minutes 8766 Hours 365 Days 6 Hours

13 Months, 1 Day, and 6

Note, The Year is also divided into 12 Calendar Months which contain 365 Days, according to this good old Verse, was

Thirty Days bath September, April, June, and November, February bath 28 alone, and all the rest bave Thirty in

SUBTRACTION.

THE next Rule in Arithmetic is Subtraction (commonly but erroneously called Substraction) and this Rule teaches to take a lesser Number out of a greater, and sheweth the Remainder. Excess, or Difference:

Place the lesser Number under the greater (with the same Care, and in the same Order as in Addition) draw a Line under them, and, beginning at the Right hand take each Figure in the lower Line from the Figure under which it stands: But if the Figure in the lower Line is greater than that in the upper, then in Numbers of one Denomination, ten must be borrowed an added to the Figure in the upper Line; then take the

3

re in the lower Line from the Sum, and write down the mainder, but for every ten thus borrowed, one must be id or added to the next Lest-hand Figure in the lower ne. Example; Suppose Mr. Andrews owes to Mr. Baker 31. whereof Mr. A. hath paid to Mr. B. the Sum of 61 in part; what remains due to Mr. Baker? Answer

re the leffer Number 146 ftands under the greater 323; to find the Remainder, or Sum remaining due, I say 6 m 2 I cannot; but 6 from 13 (for you borrow 10 and add to the Figure or Cypher that stands directly over the Fire you fubtract) and there remains 7; then I that I borwed and 4 is 5, for as I borrowed to in the inferior Place ich is equal to 1 in the superior, so I must now pay fame; therefore I fay, 5 from 2 I cannot; but 5 from (borrowing 10, and adding it to the Figure 2, as above ected) and there remains 7; then I that I borrowed 1 is 2, from 3, the Figure above it, and there remains and so the Example is done; and by it is shewn that fill owes B. 177 Pounds; for a Proof of its Verity, add 7 the Remainder, to 146 the leffer of the two given imbers, and it will make 323, being the same with the eater Number, or Sum of Money first due; and theree is a fure Proof of the Truth and Certainty of the Rule. nd as Subtraction is proved by Addition, so may Addibe proved by Subtraction: For if the two aforesaid umbers, viz. 323 and 146, are added, their Total is 9; from which if you deduct 146, the Remainder will the greater Number; or if you subtract 323 from the 4,469, the Remainder will be 146 the leffer Number. All Examples in Subtraction of Numbers of one Denomiion are performed as above, they varying not at all: t however, once more, for the better Explanation, mit, a great Sheep-master hath in all 6904 Sheep, and les out of them 2490 to dispose of at Market, how many th he leave behind? To know this fet them down thus:

From—6904 the greater Number, Take—2490 the leffer Number.

Answer 4414

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Acre

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Here I say o from 4 and there remains 4; then 9 in nothing or (o) I cannot; but 9 from 10 (adding to the o) and there remains 1; then I that I borrowed 4 make 5; and 5 from 9, and there remains 4; and lat 2 from 6, and there remains also 4 (for 1 borrowed no and therefore there's no occasion of paying) so that he les behind him just 4414; which put to the Number head to Market, makes the Number he first had, viz. 6904, thews the Deduction to be true, and the Answer right.

More Examples for Practice.

1.0	Yards	Gallons	P
From 4796 Take 2929	3700 1976	47200 3197 5	4796 976
Rem. 1867	1724	15224	3819
Proof 4796	3700	47200	4796
			1

The Distance of Time since any remarkable Event be found by subtracting the Date thereof from the Date the present Year.

I. —I	761 666 the Fire o	II.—	
Since	95 Years	Since	173 Years
		III.—176	5 Gun-Powder Treat
		Since 15	6 Years

Subtraction of divers Denominations.

Here if the Figure or Figures, placed in the lower exceed those in the upper, then, as many Units must be rowed, as make an Unit, or one, of the next superior nomination; and one must be carried to the next Letter Place in the lower Line, as before.

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Of Money.

Again, Mr. Edwards fells

1. s. d. to Mr. Francis, Spanish Wool,

Sold for—242—16—3\frac{3}{4} to the Value of 2421. 16 s.

Paid in Part 174—12—6\frac{1}{2} 3d.\frac{3}{4}. and pays present Money, the Sum of 1741. 12s.

Answer — 68—03—9\frac{1}{4} 6d\frac{1}{2}; what Money remains unpaid from Mr. Francis?

Answer, 681. 3s. 9d. \(\frac{1}{4}\).

In the first of these Examples I say, 4d. from 6d. and there remains 2d. then 16s. from 2s. I cannot, but borowing one integer of the next Denomination, or 1 Pound, which is 20s. I say, 16 from 20, and there rests 4, and adding thereto the Number 2, it makes 6; wherefore I but down 6 in the Place of Shillings, and say, 1 that I borrowed and 6 is 7; now 7l. from 9l. there remains 2l. 6 the Money resting due to Mr. Darnell is 2l. 6s. 2d. is in the Example.

In the second Example I say, 2 Farthings (or an Halfpenny) from 3 Farthings, and there remains 1 or 1, which l set down in its proper Place, viz. under the Denomination of Farthings; then 6 from 3 I cannot, but 6 from 12, as marked over the Denomination) and there remains 6, and 3d. over it makes 9d. which I place under the Line in it right Place, viz. of Pence; then one that I borrowed (that is I Shilling) and 12 is 13; 131. from 16s. and there test 3, which I likewise set down under its own Rank; hen 4 from 2 I cannot, but 4 from 12 (borrowing 10) and there rests 8; then I that I borrow and 7 makes 8; from 4 I cannot, but 8 from 14, and there remains 6; that the Sum remaining due is 68 1. 31. 9d 1, as in the Work. For its Proof, you must add the Remainder, 681. 31. 9d. 4, to the lesser, or under Sum, 1741. 120. 6d. 2. and it makes 2421. 16s. 3d. 1, the Sum first due, and s a Proof of the Work's being right.

More Examples for Pradice.

TILLION DAMAS	its for 2 racine	
Due — 174—16—6 ¹ / ₄ Paid — 97—12—4 ³ / ₄	10 20 12 1. s. d. 74—10—4 29—12—9	10 20 mg 1. 1. 1. 2471—07—0 1976—16—0
Remain-77-04-11	44-17-7	494-10-5
Proof- 174-16-64	74-10-4	2471-07-0
1A Due-74-00-00 Paid-46-12-10	10 20 12 274-16-6 197-19-4	796-00-0 279-11-7
Balance- 27-07-02	76-17-2	516-08-5
Proof-74-00-00	274—16—6	796-00-0
Samuel Control of the		THE REAL PROPERTY.

Sometimes a Sum owing may be paid at feveral Times; then the feveral Payments must be added together, and their Total deducted from the Sum first due, as in this and the Examples following.

Established Clark S.

Owing 2661.

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Paid at Times — { 90 1 2 4 66
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Paid at Times - 4 9
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Paid in all 256 dela

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The 2		tan's bej	Compl		75
More due		d.	eived 3	J. 100-	s. d
ſ	24-12-		Rusin	F 6-	16-6
Received at	9-14-	-9 -0 Pa	den legre	104 104	12-
everalTimes	16-16-	$-6 r_4$	l Persons.	20- 20-	00-0
	7-16-	-6	tionas a	U 7	08-
		-	S MO THE Y	113.50 00 0	102.00
Received in all		-		11-67-	-
Rests due-1	14-09-	_3 1	Remains in	33.5	01-
Proof-	4	ال عادلو	ne men	13	-
	Avoir	dupois-W		id its Cer by Alakij	
Tons. C. 9	4 28	10 G	28 1. 1b.	12 0	16 1
rom 44-12-	1-10	246-	2-12	146-0	2-1
ake 39—14—	2-00		3-22	97-1	0-1
4-17-	3-04	81-	2-18	48-0	7-1
roof 44-12-	1-10	246-	2-12	146-0	2-10
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		20 24	a Deport	1 20 24	
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Remain 26	-07-0	3-10	270-	13210	Latte
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1700 402	-04-1	0-11	1247-	102012	
And fo much	for Subse	a Sian	which Me	thod will	Corre

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And so much for Subtraction; which Method will serve prany Denomination whatever, having Respect to the seral Tables of Quantity, as before hinted in Addition.

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MUL.

MULTIPLICATION.

HE next Rule in order is Multiplication, and perhaps the most serviceable Rule in Business, for in quick Dispatch, of all others in Arithmetic; which I had endeavour to shew by its Nature, Quality, and Uk Now.

teacheth to find out a third, which shall contain either the two as many times as the other containeth an Unit.

Multiplication is also a compendious Working of the two as many times as the other containeth an Unit.

dition.

3. It ferves likewise to bring great Denominations in small, as Pounds into Shillings, Pence, or Farthings.

we find its Content in superficial or square Measure.

5. By Multiplication we find, having the Value of on Thing, or the Wages of one Person, how to know the Valae of many such Things, or the Wages of many such Persons.

In Multiplication we are particularly to take notice these three Terms, viz.

The Multiplicand,
Multiplier, and
Product.

Numbers) is the Number to be multiplied.

2. The Multiplier (generally the lesser of the two Numbers) is the Number by which the former is to be make plied.

3. The Product is the Result of the Work, or Answer.
The Multiplier and Multiplicand are collectively calls

But before any Procedure can be made in this Rule, and the necessary to have the following Table by heart, and the very perfectly.

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Action of Dentity, as before hinted at Addition.

the Denomination whatever, bowled Appeal to the fee

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39	100			5015	1-12	robin	34 21	1.00	9-3-17	3 8 4	11/11/51
1	-2	3	4	5	6	7	8	9	10	11	-12
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
0	20	30	40	50	60	70	80	90	ioc	110	120
1	22	33	44	55	66	77	88	99	110	121	132
2	24	36	48	60	72	84	96	108	120	132	144

This Table is so plain and easy, that there is no need of Direction; for the Product of any two Figures will be ound in that Square, which is on a Line with the one, and under the other; thus 54, the Product of 6 and 9, will be found on a Line with 6, and under 9, or on a Line with and under 6; so 7 times 8 is 56, and 8 times 7 is 56. So. And thus the Table ought to be got by-heart; for the more dextrous Readiness in multiplying.

Now for Application

Example 1. How many are 3 times 472? Which 472 eing set down in the Margin; I say, 3 times 3 is 6, which place under 3 the Multiplier; then times 7 is 21; set down 1 under 7, and carry 1416 for the two Tens, as in Addition of one Denomination, then 3 times 4 is 12, and 2 carried is 14; which set

E 3

down,

down, and the Product is 1416; that is, 3 times 472 make fo much; which may be proved by Addition, by fetting down 472 three times, in Additional Order, and casting up, which makes the Assertion good in the second Definition, that this Rule compendiously performs the Office Addition. Likewise the foregoing Example agrees where first Definition; for as three times 472 makes 1416, doth 472 times 3 make the same, viz. 1416.

Example 2. Again, how many are produced by me

tiplying 742 by 4?

Here I say, 4 times 2 is 8, and

4 Multiplier

times 4 is 16; 6, and carry 1; and
times 7 is 28, and 1 is 29, which se
down; so the whole Product is 2068
as appears by the Work.

More Examples of one Figure in the Multiplier, in

thefe, viz.

Multiplie.	7420	4444	7460	90704	5678
			-	The same of the same	1 36
Product	37100	26664	52220	725632	51110
		1	4.1	1 1-	1 3000

Compound Multiplication

Is when the Multiplier confits of two, three, four,

more Figures or Cyphers.

And here you must begin with that Figure which is a the Place of Units of the Multiplier, and go through the whole Multiplicand, by multiplying each Figure of it by that said Unit Figure, then by the next, to wit, by the Figure in the Place of Tens of the Multiplier; then with the third, &c. to the last; always remembring to place the first Figure of every Product or Line (for you will eve have as many as you have significant Figures in the Multiplier) I say, remember to place the first Figure of each Line exactly and perpendicularly under the Figure you multiply by; and then add the several Lines or Product together, which so collected give the total Product required, as in the Examples following, viz.

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Example 1.

How many are, 23 times 7426 ? First I begin 7426 ith the Unit Figure 3 in the Multiplier, fay-23 ng 3 times 6 is 18; 8 (which I fet directly uner 3 by which I multiply) and carry 1; then 3. 22278 imes 2 is 6, and 1 is 7; then 3 times 4 is 12; 2 nd carry 1; then 3 times 7 is 21, and 1 is 22: nd fo I have done with the first Figure of the 170798 Multiplier, viz. 3. Then I go to the next, that. s 2, and twice 6 is 12; 2 and I carry I (which 2 is placed n a direct Line under 2, the multiplying Figure, then twice is 4, and 1 is 5: then twice 4 is 8; and, lastly, twice 7 14, which I fet down; then I add the two Products ogether, faying 8 is 8, &c. and the Total is the true Product, or Result of the Multiplication, viz. 170798. Again,

Example 2.

What is the Product of-Multiplied by-

It will appear too prolix, and altogether unnecessary to give more verbal Directions; nay, indeed, naufeous Tautology, fince those given above are sufficient; and therefore the Learner is referred to the Observation of the Example, as also to those two that follow, viz.

527535 15728	275827
4220280 155070 3692745 2637675 527535	1379135 551654 1930789 2482443 275827
8297070480	5440687575

When Cyphers are intermixed with Figures in the Muliflier, then multiply by the Figures as above; and when you come to a Cypher in the Multiplier, then let down another Cypher exactly and perpendicularly under it, then begin the Multiplicant again with the next Figure to the Cypher in the Multi60

Multiplier, and go through it in the same Line, placing the first Figure of that Product next to the Cypher, towards the Lest-hand, but then heed must be taken that the next Figure or Cypher of the next Line must be set down one Degree farther towards the Lest-hand, and not immediately under the last Figure set down to the Cypher: As in the following Examples may be fully understood.

24393_ 402	7864371	327586 6030
48786 975720	31457484 471862260	19655160
9805986	23593113 15728742	1975343580
	185630613084	

When you have a Cypher or Cyphers in the Multiplier, at the Beginning towards the Right-hand, then fet it, or them, backwards from the Place of Units towards the Right-hand; and when you have multiplied by the Figure or Figures, annex the Cypher or Cyphers:

4762	As in these Examp. 47962 400	des, 4632 2600
333340	19184800	27792 9264
		12043200

If you have Cyphers both in the Multiplicand and Multiplier, then neglect the Cyphers in both, and multiply by the Figures, and annex the Cyphers at last:

42600	42300 12000	376400
852 852	846 423	15056 7528
9372000	507600000	903360000
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When you are to multiply by 10, 100, 1000, 10,000, is only adding or annexing to many Cyphers to the Multiicand, that is, either 1, 2, 3, or 4 Cyphers, and the Work done, Example, Suppose I am to multiply 375 by the lumbers above; if I multiply it by 10, then I join o to 75, and then it makes, or the Product is, 3750; if by 100, en I annex oo, and then it makes 37500; if by 1000, I at to it ooo, and then it produces 375000; and laftly, by 10,000, I then add 0000, and then it makes 3750000, And thus may any Number be multiplied, when the fultiplier confifts of an Unit with any Number of Cyphers, d done by Inspection only, without any formal setting own the Multiplicand with a Line drawn under it, &c. Thus far for Direction in the Manner how to multiply; e next will be to shew the Uses of Multiplication in real usiness, and how to apply it on proper Occasions, wiz. 1. Suppose you want to know how many half Crowns ere are in 246%, you know that 8 half Crowns make 1 %. herefore fet them down thus:

Multiply by 8

Answer 1968

Again, in 1958 half Crowns how many Pence?

30 Pence in half a Crown.

59040 Pence the Answer.

And this serves to make out, that great Denominations to brought into smaller by this Rule, according to the third essition.

2 Admit you wanted to know the Contents of a large uffle-board Table, 34 Foot long, and 4 Foot wide, mulby 34 the Lengh by 4 the Breadth, and the Answer will
136 square Feet for the true Contents of such a Table.
In this agrees with the fourth Definition of this Rule.
3. If I know the Value of a Yard of Broadcloth to be

Shillings, what is the Value of 220 Yards of the faid oth in Shillings?

E 5

Mul-

cenning Klassittinesson of

Multiply by 12

440

2640 Shillings, or 132 Pounds.

If the Wages of 1 Seaman be 23 Shillings a Month, whi is the Wages of 250 Seamen for the fame Time?

Multiply by 23

750

Answer 5750 Shillings, or 2871. 10%

And these two Examples accord with the fifth Definite or Use of this Rule.

And thus much for common Multiplication.

I shall, in the next place, say some small matter of cerning Multiplication of Money, and a little of its Use, as fo conclude this Rule.

Multiplication of Money.

Multiplication of Money (what most would learn about any thing) hath great Affinity with Addition of Money; to same Method being taken in carrying from one Denomination to the next, viz. from Farthings to Pence, from Pento Shillings, and from Shillings to Pounds. And as in Addition (and other Multiplications) you begin at the Right hand, and proceed towards the Lest, so here you begin the least Denomination, which is also at the Right-hand.

whatfoever.

The General Rule

Is always to multiply the Price by the Quantity.

The first Step is, for Quantities from 2 to 12; and the done by one Multiplier; as in the Examples following

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Quantity

The Young Man's best Companion. Example 1. d. Multiply -(or 6 Pieces of Cloth at 1. 7-12-6 per Piece) by 45-15-0 Here I say, 6 times 6 is 36 Pence, which is just 31. I set down o in the Place of Pence, and carry 3s. to the Place of Shillings, (exactly the fame as in Addition of Money then 6 times 12 is 72, and 3 is 75 s. or 3 l. 15 s. wherefore I fet down 15 in the Place of Shillings, and carry 3 to the Pounds; then 6 times 7 is 42, and 3 is 45%. So the whole Amount of the 6 Cloths, at 7-12-6 per Cloth, is 451. 153. as in the Work, which is very concise. Example 2. Again, How much is 9 times 13 s. 4 d. or what is the Amount of 9 Marks? In this Example I fay, 9 times 4 is 36 d. or 3s. I fet 6-00-0 down o, and carry 3; then times 3 is 27, and 3 makes 30; I fet down o, and carry 3 (as in Multiplication of simple Numbers; then o times 1 is 9, and 3 is 12; which is in the Place of Tens of Shillings, and being halved, make just 61. and so much is the Value of 9 Marks. Example 2. Once more: What comes 12 Gallons of Wine to, at 5 1. 4d. per Gallon? Here I say, 12 times 4 is 48; 0 and carry 4; then 12 times 5 is 60, and 44 is 641. or 31. 45. &c. 1. 3-4-0

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The next Degree or Step of Advance in this way of Reckoning, is of Quantities exceeding 12, even to 12 times 12, or 144; all which, as far as 144, are found in that excellent Table, the Table of Multiplication; which is a ready Help to all Purposes of Reckoning, and particularly in this Way: and that you may proceed with Dexterity, you must be very ready in the said Table, that you may be immediately apprehensive what component Parts hit your Quantity proposed, or pretty near it (for any Quantity below.

low 12 needs no Recollection at all, as in two of the Examples foregoing) and then work accordingly; if the Quantity be 15, Yards, I readily know that 3 times 5 is 151 and therefore 3 and 5, or 5 and 3, are to be my Multipliers: If the Quantity were 21, then 3 and 7, or 7 and 3, would be Multipliers; If 30, then 5 and 6, or 6 and 5; also 3 and 10, or 10 and 3; if 45, 48, 56, 66, 72, 96, &c. were the Quantities, then 5 and 9, 6 and 8, 7 and 8, 6 and 11, 6 and 12, and 8 and 12, &c. are to be Multipliers, and exactly hit the several Quantities of which they are component Parts; and Examples of this Kind have two Multiplications for their Solution.

When the Quantity proposed is a Number irregular, or such a Number that no two Numbers in the Table can be found to answer it, then we must multiply by two such Numbers as come pretty near it, as is said above; and for the Number wanting to make up the Number or Quantity proposed, multiply the given Price of one by the Number that is wanting, which will make three Products by three Multiplications; which last Product must be added to the foregoing Products resulting from two Multiplications, and

the Total will be the Answer.

And first, I shall shew Examples of the second Step, win.
of Regular Quantities that exceed 12, and are precisely answered at two Multiplications, such as mentioned above,
wiz.

s. d.

What comes 15 Yards of Mussin to, at 3-5
per Yard?
3 and 5

Here 3 times 5 is 15d. or 1s. and 3d.

3 and carry 1s. then 3 times 3 is 9,

10-3

and 1 is 10s. so the first Product is

ros. 3d. which I multiply by 5, fay
ing 5 times 3 is 15d. or 1s. 3d. 2-11-3

3 and carry 1; then 5 times 10 is 50

and 1 is 51s. or 2l. 11s. So the Amount of 15 Yards,

at 3s. 5d. per Yard, is 2l. 11s. 3d. And demonstrable
thus; viz. If 10s. 3d. be the Value of three times 3s.

5d. then 5 times the Value of 10s. 3d. must of ne
ressity be 15 times the Value of 3s. 5d. because 5 times
3 is 15: And its Truth may be proved by Addition and

Multiplication, thus; set down 3s. 5d. three times, in

Additional Order, and put the three Lines together, and
the Total of them multiply by 5, as before, and the Ag
sum of the set of the se

her will hem tog the Refu of Work

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we are to Table; posed; Number duct is second or

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wer will be the fame. Or fet down 173. 1d. (the Product of 3s. 5d. multiplied by 5) three times also, and add them together, and the Total will be exactly the same with the Result by Multiplication; as in the following Specimens of Work.

(I)	5 . C. 1 b	(2)		I would	
s. d.	1	s. d.	F. 1		s. 2.
3-5		3-5			17-1
3-5		5			17-1
3-5		17-1		0	17-1
10-3	1.7			2-	-11-3
, 5	4		111	w die	rbai a'i
2-11-3		1025			

Here the first of these two Proofs is worked by Addition and Multiplication, and the second by Multiplication (as per Margin) and Addition. Also,

By this we see, that in all Examples under this Head, we are to pitch on two Numbers (or Multipliers) in the Table; which, multiplied together, make the Quantity proposed; and then we are to multiply the Price by one of the Numbers (it matters not by which first) and then that Product is to be multiplied by the other Number, and the second or last Product will be the Answer.

Example 2.

Aga	nin, What is the Value	of 21 Gallons of Brandy? In this Example I fay, 7
at	7-9 per Gallon.	times 9 is 63 d. or 5 s. 3 d.
	7 and 3	I fet down 3 and carry 5 :
		then 7 times 7 is 49, and 5
	2-14-3	is 54s. or 21. 14s. So the
		first Product is 21. 14s. 3d.
	0	which I multiply by 3, and
	8-02-9	that produces the lastProduct
	-	or Answer, viz. 81, 21, 9d.

Now follow a few more Examples of this Sort, without any verbal Directions, because I think those already given to be sufficient.

Example

86 The Young Ma	in's best Companion.
Example 3.	tral The State of
What comes 30 Ells o	Example 6.
Holland to, s. d.	AT THE BOARD OF THE STREET, AT THE STREET, STR
at 3-7 per Ell.	of I
10 and 3	72 Broad Pcs. at 23-6 sack only
	12 and 6 cafe
1-15-10	the
. 3	14-02-0 the
	6 two
Answ.5-07-06	con
10 10 10 10 10 10 10 10 10 10 10 10 10 1	84-12-0 fubl
Example 4.	- E
45 Pounds of Raw Silk	tipli
at 15-6 per lb.	Example 7.
5 and 9	
Committee Page 19	108 lb. of Indigo Lahore,
3-17-6	at 71. 8d.
9	9 and 12
Charles and the state of the st	A CHEST OF A THE COURSE OF THE
Anfav.34-17-6	3-9-0
P	the section of the section of
Example 5.	4.4
56 Bulhels of Wheat,	Anfw. 41-8-0
at 4-0	D.
7 and 8	Pric
	wan &
1-13-2	whi
1-13-3	Val
7.134 7.05 8.00	, va
Anfw.13-06-0	per
	The state of the s
BRan	mple 8.
CO CO	d. S. d.
96 G. of Currants, at-	2-13-6 per C. 8 and 12
1	8 and 13
	21-08-0
	21-00-0
	12

The

Anfwer-256-16-0

107-

110-

The next Gradation of Advance is of Quantities irregular, or of Numbers that are not to be unswered precisely at two Multiplications: In this Case there ariseth no Increase of Difficulty, but it is as easy as the Examples foregoing; only here you will have an Addition of one Line more, occasioned by bringing down the Price of one to be added to the last Product; or else a Line more made by multiplying the Price by what is desertive or wanting in the Number by two Multiplications, to make up the proposed Quantity complete; as it may be of 2, 3, 4, 5, 5. as by the subsequent Examples may be seen and understood.

Example 1. What is the Product of 21. 131. 6d. mul-

tiplied by 39?

-6 each

ore,

d 12

nd 12

6 and 6

16-01-0
6

96-06-0
8-00-6

Here I find that 6 multiplied by 6, makes 36; which is within 3 of the Quantity proposed; wherefore I multiply by 6, and that Product again by the other 6; the last Product is 96%. 6%. Which is the Value of 36; but we want to know the Value of 39, wherefore I multiply the

Price of one, viz. 21. 13s. 6d. by 3 that is defective or wanting to make up 36 to 39, faying, 3 times 6 is 182. 8c. And finding that 3 times 21. 13s. 6d. is 81. 00s. 62. which added to 961. 6s. od. the Total gives the complete Value of 39; for 36 and 3 makes 9. See the Work.

Example 2. What comes 79 C. wt. of Cheefe to, at 28 %.

per C. weight?

1. s. w. 1-8-0 7 and 11 9-16-0 11 107-16-0 2-16-0 In this Example I fay,
7 times o is o; then 7
times 8 is 56; which is
2 l. 46s, fet down 16 and
carry 2; then 7 times 1 is
7, and 2 carried make 9.
So the first Product is 96
16s. od. which multiplied
by 11, produces 107 l. 16s.
od. or the Value of 77;
then for 2 wanting I multiply the Price by it, and
that

that gives 21. 161. od. which added to 1071. 161. od. makes the whole Value of 79, viz. 1101. 121. od a in the Work. Or as there are no Pence in the Price, you may multiply 28 1. by 79 without bringing it into Pounds as you work it, but omit it till the last, and then cut off or separate the last Figure or Cypher of the Product towards the Right-hand, and halve those towards the Lest, which half will be Pounds and the Figure cut off Shillings, as in this Example.

1. 110.12

The half of 2 is 1, the half of 2 is 1, and the half of 1 is 0, which 1 joined to the 2 severed from 221, makes 12; so the Answer is 1101. 121. as before.

Example 3. 112 Pound of Sugar 5d. 1 per lb. fet down thus:

5. d. 5½ per Pound. 10 and 10

4-07

05-06 the Product of 5d. 2 by 12 defective.

2-11-04 the Answer.

3211

Here after I have multiplied by 10 and 10, the Parts of 100, there wants 12; wherefore I multiplied 5d. \(\frac{1}{2}\) by 12 and it gives 5s. 6d. for 12lb. at 5d. \(\frac{1}{2}\), which added to 2l. 5s. 10d. the Value of 100, makes 2l. 11s. 4d. the true Value of 112lb. at 5d. \(\frac{1}{2}\) per Pound.

07-0

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Example

Stone.

18-0

05-00

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l. s. 1—05—

4-15-8-00-

Note, F.

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Example 4. 94 Stone of Beef at 22 d. or 11. 10 d.

15. 10d. 10 and 9

18-04 9 -05-00 07-04

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-12-04 Answer.

Here what is wanting after the two Multiplications, is 4; wherefore I multiply 1s. to d. (the Price) by 4, which produces 7s. 4d. to be added, &c.

Example 5.

97 C 1 of Raisins.

1. 1. d. 1-05-06 per C. 9 and 1.0

10

4-15-00 8-00-06 0-12-09 for the # C.

4- 06-03

After I have multiplied by 9 and 10, I multiply the Price 25 s. 6 d. by the Quantity wanting, and it produces 8 l. 18 s. 6 d. then for the half C. I take half of the Price, which is 12 s. 9 d. and then collect the three Lines, the Total of which is 124l. 6s. 3d. for the Answer.

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oker Brees, the Ligary in at a co-

Note, From the last Example may be observed, that there no need of too much Solicitude, concerning coming so ry near by two Multiplications, for there 7 is wanting to ake up the true Quantity; nay, if the two Multiplications short by 10 or 12, it is near enough; for 'tis as easy to altiply the Price by 10 or 12, as by 2 or 3, and the Adion is the same.

Example 6. Once more; What comes 110 Cof Histo, at 41. 10s. 6 d. per C.

1. 3. d. 4-10-06 10-10 45-05-00 10 452-10-00 45-05-00 2-05-03 1-02-07¹/₂

501-02-101 Answ.

After having multiplied by and 10 which makes 100, I multiply the Price 4 l. 10 s. 6 d. by a that is wanting, which gives a fame with the first Product, in 45l. 5s. od. which stands under the Product by 100; and for the of a C. I take \(\frac{3}{4}\) of the Price, in first the half, and then the half that half, that is, 2l. 5s. 3d a 1l. 2s. 7d \(\frac{1}{2}\); which four Line added together make 501 l. 1 10d \(\frac{1}{3}\) for the Answer.

To prove Multiplication,

Whether of Simple Numbers, or of Money, it is me furely done by Division; but before that is known, at this Method, wiz. As you multiplied the Multiplicand the Multiplier, so contrariwise multiply the Multiplier the Multiplicand; and if the Products are alike, the Wo is right; or otherwise one of them is wrong, and must gone over again till they do agree.

Example i.

365 Days in a Year. 24 Hours in a Day.

730 8760

Here (reversely) I say, 5 times 4 is 20; 6 and carry 6 times 4 is 24, and 2 is 26; 6 and carry 2; and 3 times 4 is 12, and 2 is 14. Then 5 times 2 is 10; 0 and carry 1; 6 times 2 is 12, and 1 is 13; 3 and carry 1; and times 2 is 6, and 1 is 7. Which Products, added together make 8760, the Hours in a Year, without taking in the odd 6 Hours, which the Year doth consist of more the 365 Days.

Gallon s. d.

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Example 2.

Gallons of Spirits at

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I fay here, twice 7 is 14; 2 and carry 1 s. and 3 times 7 is 21, and 1 is 22 s. or 11. 2s. Again, twice 8 is 16d. 4 and carry 1s. and twice 8 is 16, and 1 is 17 s. 17 and carry 0; and once 8 is 81. Thus both these Examples are the same in consequence as if you proceeded in the common and regular Method of Muhiphitation, and shews the Truth of the Operation.

The next Rule in order, is

DIVISION.

HIS Rule, though accounted the hardest Lesson in Arithmetic, yet I shall make it easy and intelligible the meanest Capacity.

The Use of this Rule is to know how many times one lumber or Sum is contained in another; as if it were asked, ow often is 9 contained in 55? the Answer is 6 times; or ow many times 12 is there in 144? Answer 12 times.

As by Multiplication great Names or Denominations are rought into small; so contrarily, by Division, small Names rebrought into greater; as Farthings (from one Gradation another) into Pounds, Pounds Weight into Tons Weight, and Gallons Liquid into Tons Liquid, &c.

In this Rule we are to take particular Notice of these tee certain Terms following, viz.

The Dividend, or Number to be divided.

The Divisor, or Number by which we divide.

Quotient, or Answer to the Work; which stews how often the Divisor is contained in the Dividend.

4. The Remainder; which is an uncertain Branch of this ule, because there is sometimes a Remainder, and some mes not. And you must particularly note, that the mainder is ever of the same Warme with the Division, and is always less than the Division; for if it be more, or qual to the Divisor, the Work is wrong.

Division is either Single or Compound, Single, when the livisor consisteth of a magle Figure, and the Division of

two

two at most: Any of this sort is answered by the Multication Table; as if 63 were to be divided by 7, the Aust will be 9 times. Here 63 is the Dividend, 7 the Dividend and 9 the Quotient or Answer.

Compound Division is when the Dividend hath many, more Figures or Cyphers than two, and the Divisor one

more Figures or Cyphers, &c.

Example.

How many times 7 is there contained in 365? Or, h

la de la constante de la const	A General Rule for Working.	7) 365 (52
Note <	1. Seek 2. Multiply 3. Subtract 4. Bring down	35 man f
ri mal	4. Bring down	(i) H

Having fet down the Example with two crooked Lin or half Parentheses, one for the Divisor, and the other the Quotient, I begin according to the afore-mentioned neral Rule for Working, by feeking or asking how often can take 7 the Divisor, out of 36 the two first Figure the Dividend (for I cannot take 7 out of 3, the Quality being never to begin with o) and the Answer is 5 times wherefore I place ; in the Quotient, and multiply the Div for 7 by it (as directed in the General Rule) faying 5 tim 7 is 35, which I place under 36; and then thirdly, according to the faid Rule, I subtract 35 from 36, and the remains 1; to which I bring down the next or last ! gure of the Dividend, viz. 5, and then there is 15 h a new Dividend, or Dividual to work upon; then I a or feek again, how oft 7 may be taken in 15? and the Answer is 2 times; wherefore I put 2 in the Quotient no to the 5; by which 2 I also multiply the Divisor 7, saying twice 7 is 14; which I fet down under 15, and fubrad and there remains 1, which I place between two Sem circles thus, (1) as it stands in the Work; where observe That 365 is the Dividend, 7 the Divisor, 52 the Quality or Answer, and 1 the Remainder: The Quotient declare that 7 is contained in 365, 52 times, and 1 over, or 16 maining ; which I fet over the Divisor, thus I, and fight hes that there is one seventh of a Week, or 1 Day, mo

n just 5 be foun they sta You may at is ca dend ; b Note al ers in th wn one d (after mains O ypher at wn, the cording veral Di pher at wn, and For a S ually an 8060 (1

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the Que own o, the Eight of there on must be dividend which man the Rendone, the half for Note, own a Finished In the I ath been

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n just 52 Weeks in a Year, or 365 Days; which is easily be found by collecting the Days of each Calendar Month they stand in the Almanack.

You may note, That the faid \(\frac{1}{7}\) one seventh is properly at is called a Fraction. or a Piece or Segment of the Di-

dend; but of this hereafter.

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Note also, That if there had been more Figures or Cyers in the Dividend, they must have all been brought wn one by one at a time (and never but one at a time) d (after Subtraction) fet to the Remainder; and if there mains 0, you must still bring down but one Figure or pher at a time; and for every Figure or 0 so brought wn, there must be a Figure or 0 placed in the Quotient, cording to the times you can take the Divisor out of the veral Dividuals you make, by bringing down a Figure or pher at a time out of the Dividend, till all be brought wn, and the Work ended.

For a Specimen, let us divide 8060 Pounds of Tobacco

ually among 8 Men.

8060 (1007 Quotient.

8... 060 56

(4)

Here I say the Eighths in 8 once; which I put in the Quotient, then the Eighths in o, o times; which I likewise put in the Quotient; then the Eighths in 6, o times again; which is also placed

the Quotient, and there remains 6; to which I bring own 0, the last of the Dividend, and it makes 60; lastly to Eighths in 60, 7 times, and 7 times 8 is 56 from 60, at there remains 4; so the Quotient shews that each Permuss have 1007 Pounds of Tobacco for his Share in the lividend 8060, and there remains 4 Pounds over and above, hich makes half a Pound more due to each Man, because the Remainder is half of 8 the Divisor; and so the Work done, the Quotient giving to each Man 1007 Pounds and a half for his equal Share.

Note, That in the Operation, every time that you bring own a Figure or Cypher, you are to make a Point under in the Dividend, to figure that fuch a Figure or Cypher ath been brought down and done with, as may be observed

the foregoing Example.

Though this Way of Working is plain, and easy to be inderstood, yet it is somewhat tedious; and therefore I shall

fnew a quicker Way for Dispatch, when the Divisor fingle Figure; as shall be made conspicuous in these En ples following, viz.

	4)78966	II. 5) 34567	III. 6) 2970a
Quotient	19726(2)	6913 (2)	4950
Proof	78906	34567	29702

In the first of these Examples I say, the 4's in 70 and there remains 3; which confidered as placed before the next Figure in the Dividend, makes 38; then the 38, 9 times; 9 times 4 is 36, from 38, and there rem 2; which makes 9, the next Figure in the Dividend. then the 4's in 20, 7 times; 7 times 4 is 28 from 20, there rests 1; which makes o, the next of the Divid 10, and the 4's in 10 twice; twice 4 is 8 from 10, there remains 2; which makes 6; the last Figure of Dividend, 26; lastly, the 4's in 26, 6 times, and 6 in 4 is 24, from 26, and there rests 2 the Remainder: fo for the other two Examples. And for Proof of Work, (or of any other Example) multiply the Que by the Divisor, and take in the Remainder in the first Pl or Place of Units; and if the Product be the fame w the Dividend, the Division is right; For I say, 4 times 24, and 2 the Remainder makes 26; 6 and carry 2, 86

More Examples by a fingle Figure.

para talah 12	3) 54321	7) 279060	9)	234567
Quotient	18107 (0)	39865	(5)	26063 (0
Proof	54321	279060		234567
	_			

This is the shortest Way of Division that can be, by a sing

As it is as necessary for Expedition to divide by 11 12, as by a single Figure, to have the product in one life of divide as in these Examples, viz.

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otient	6604200	(6)	6389770	01 11
oof	72646206		76677240	
11)	47627000	15.	12) 42007400	
otient	4329727	(3)	3500616	(8)
oof	47627000		42007400	La parte
In the first	of these Exa	mples	. I fav. the rr's	in 72

er 6 times, &c. In the second, I say, the 12's in 76, fwer 6 times, &c. In the third, the 11's in 47, 4 times; imes 11 is 44, from 47, and there refts 3, &c. In the uth, I fay, the 12's in 42, 3 times; 3 times 12 is 36,

m 42, and there remains 6, &c.

By being ready and dextrous in the Example above, you y expeditiously divide by these Numbers, viz. 110, 120, oo, or 1200, &c. for 'tis but cutting off, or separating the phers from 11 and 12, (when these Numbers happen to Divisors) and cutting off and separating the like Numbers Figures or Cyphers from the Right-hand of the Dividend,

then divide the other Figures or Cyphers towards the est-hand, by 11 or 12, as it shall happen; as in the

amples following, viz.

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Divide 34567 by 110, and 890123 by 120, and 98765 1100, and 678901 by 1200.

120) 89012 3 11,0) 3456,7 7417 8 or 83 notient 3147 or 27 11,00) 987,65 12 00) 6789 01 89 8 or 865 565 9 or 901

When you divide by 10, 100, 1000, or 10000, &c. you we nothing more to do than to cut off, or to feparate fo my Figures or Cyphers of the Dividend towards the RightRight-hand, as you have Cyphers in the Divisor, and a Figures towards the Left make your Quotient; and a cut off towards the Right, the Remainder.

Examples.

Divide 123456789 by 10, 100, 1000, 10000.

By 100 the Quotient is 12345678, and the Remainder 89, By 1000 the Quotient is 1234567, and Remainder 89, By 1000 the Quotient is 126456, and Remainder 789

By 10000 the Quotient is 12345, and Remainder 676 When the Divisor consisteth of several Figures, then the ariseth a little more Difficulty in the Work; but if the lowing Directions are heedfully attended to, the seems Difficulty is easily overcome; as in the succeeding Example 2012.

Suppose I am to divide 78901 Pounds among 32 Parishs or suppose an Assessment of so much Money was laid on many Parishes; what must each Parish pay by an equipose Proportion towards the raising such a Supply?

Divisor 32) 78901. (. . . . Quotient.

The Example thus set out, I begin at the Lest-han seeking how often I can take 32 out of 78; or more as how many times 3 there is in 7, and the Answer is 2 time which I place in the Quotient thus 32) 78901 (2. a then according to the General Rule of Working, I multiply the Divisor 32, by the 2 placed in the Quotient, saying twice 2 is 4, and twice 3 is 6; so there is 64 to be the out of 78, which should stand thus:

32) 78901 (2 64

14

Then I make a Point under 9, the third Figure of Dividend, and bring it down to the Remainder 14, 1 then the Work appears thus:

32) 78901 (2 64

149

Then I seek again, asking how many times 32 in 14 which is not readily to be answer'd; but how many times 3, the first Figure of the Divisor, is there in 14, the two in Figures of the Dividual 149, and the Answer is 4 times wherefore, after placing 4 in the Quotient, I multiply, and

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Example 2 Parisher laid on an equ

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2 in 149 nany tim ne two fi 14 time ply, (21

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thed in the General Rule) the Divisor 32 by the said 4, ying, 4 times 2 is 8, placing it under 9 in the Dividual; en 4 times 3 is 12, which set down under 14; so there is 128 be taken out of 149, and then the Work appears thus:

And after Subtraction there remains
21; then I make a Point under o in the
Dividend, and bring it down to the Right
of the Remainder 21, and then there is
210 for a new Dividual; then as the
General Rule directs, I feek again, fay-

ing, how many times 32, the Divilor, there in 210, the Dividual? or easier, how many times 3 21? But observe well, That whenever you have a lace more in the Dividual than in the Divisor, then always ek how oft you can take the first Figure of the Divisor ut of the two first of the Dividual, and the Answer is 7 mes; but it will not bear 7 times, for 7 times 32 is 224, nd you cannot take 224 out of 210; or rather, you cannot ske 22 out of 21; wherefore try in your Mind before you t down the Answer, or Figure of the Quotient, whether it ill go to the Number of Times as is most easily suggested; shere the Question or Demand is readily answered 7 times; nd fo many times 3 may be taken in 21; but when you ome to multiply the whole Divisor by the Times you place the Quotient, you begin at the Right-hand, and go tovards the Left, carrying the Tens that arise to the next face, which increases the Product so, that sometimes Subnation cannot be made, because the under Line is greater han the upper; wherefore first try in your Mind as aboveaid; and fince it will not bear 7 times, try if it will go: times; faying, 6 times 2 is 12, 2 and carry 1; and 6 imes 3 is 18, and 1 is 19; and 19 may be taken out of 21; herefore fet down 6 in the Quotient, next to the 4, and multiply the Divisor 32 by it, and the Work will fland

Here the Divisor 32 multiplied by 6, gives 192 to be taken out of 210, and the Remainder is 13; to which, after a Point made under it, I bring down the 1, the last Figure of the Divisiond, and then there is 181 for a new Dividend, and then, according to the Rule, I feek again (for you are to note, That the

aforesaid General Rule for aworking must be as often repeat as you bring down a Figure or Cypher from the Dividen to make a new Dividual; and also, that for every Figure or Cypher brought down, there must likewise be a Figu or Cypher placed in the Quotient) how many times 32th Divisor may be taken out of 181 the Dividual: or how man times 3 in 18, and the ready Answer is 6 times; but onthe Trial I find it will not go fix times; wherefore I try a Quo tient Figure less by 1, viz. 5 times 32) 78901 (246) and find it will bear it: and fetting ; in the Quotient next to the 6, I mul-149 tiply the Divisor 32 by it, and it pro-128 duces 160; which subtracted from 181. 210 the last Remainder is 21, and the Quo-192 tient or Answer is 246; which shews that 32 is contained in 78901, 246; 181 160 times, and 21 over. (21)

Again, Admit a Nobleman hath 30,000 l. per Annun,

what is his daily Income?

If you divide 30 000 by 365 (the Days in a Year) the Quotient will be the Answer. Set it down for working thus

305) 30000 (

First, feek how many times 365 can be taken in 300 (an equal Number of Places with the Divisor) answere times; wherefore I go a Place farther to the Right hand, if the Dividend (for o must never begin the Quotient, as wa faid before) and make a Point under it, viz, under the la o but one, as may be feen in the Example; and there being a Place more in this Dividual than in the Divilor, I led how ofte the first Figure of the Divisor, wiz 3, is cont ined in the two first Figures or Places of the Dividend viz. 30, and the Answer is 10 times; but you are never to take above 9 times at once, in any of these Example of Division; wherefore try in your Mind whether it will bear o times, before you fet it down in the Quotient la was fard before) faying to yourfelf, or in your Mind, o time 5 15 45; 5 and go 4; 9 times 6 is 54, and 4 is 58; 8 and go 5 ; and 9 times 3 is 27, and 5 is 32; now 32 cannot be taken out of 30, wherefore take a Figure less by a Uni or one, viz 8 times; and finding it will go 8 times, to dow's in the Quotient; and then fay, 8 times 5 is 4010 and carry 4; and 8 times 6 is 48, and 4 is 52; 2 and carry 5 d-8 tim be take Il appe

hen to the Di en you ividual oth Div fwer tv

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18 times 3 is 24, and 5 is 29; and then there is 2020 be taken from 3000: and, after Subtraction, the Work I appear thus:

365) 30000 (8

80

then to the Remainder 80, I bring down o, the last Figure the Dividend, and then there is 800 for a new Dividual; en you must try how oft you can take 365 out of the said ividual 800, and the Number of Places being equal in the Divisor and Dividual, to wit, 3, ask how out 3 in 8; swer twice; so put 2 in the Quotient, and say, twice 5 10; 0 and carry 1; and twice 6 is 12, and 1 is 13; 3 and 11y 1; and twice 3 is 6, and 1 is 7; so there is 730 to deducted from 800, and the Remainder is 70, as in the lork may be seen, viz.

365) 30000 (82 2920. 800 730

Thus it appears that the Nobleman hath Eighty-two Pounds per Diem, and 70 Pounds over; which if multiplied by 20, the Shillings in a Pound, would produce 1400 Shillings; which if divided by the Divisor 365, there would come out 35. a Day more, and there

(70) come out 3s. a Day more, and there ill be a Remainder of 305, which multiplied by 1z, the mee in a Shilling, produces 3660; which, divided still by 65, gives 10 d. a Day more: So that 30,000 l. a Year 1.82-3-10 a Day.

Once more, Divide 46242 Gallons by 252, the Gallons a Tun, thus fet down:

252) 46242 (183

2104

2016

882

756

In this Example, after Enquiry, I find that it will not go twice, therefore I fet down I in the Quotient, and place 252 under 462 of the Dividend, and after Subtraction the Remainder is 2:0; to which I bring down 4 from the Dividend, and the Dividual is 2:04; and then feeking again, I

(126) find it will bear 8 times, which laced in the Quotient, and the Divisor 252 multiplied by

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it, the Product is 2016 to be subtracted from 2104; which being done, the Remainder is 88; to which 2, the laft & gure of the Dividend, being brought down, there is silve for the last Dividual; and then seeking again, I find it will go 3 times; and the Product of the Divisor multiplied be 3, is 756; which subtracted from 882, there remains 126 for the Remainder; So that by this Division I find there are 183 Tuns in 46242 Gallons, and 126 Gallons' no maining, or over and above, which being half of 23 the Divisor, the Remainder is therefore half a Tun more

When you have a Cypher or Cyphers in the Divifor, i the First, Second, or Third Place, &c. separate such Cy. pher or Cyphers, with a Dash of the Pen, from the refer the Divisor; and also cut off as many Figures or Cyphen from the Right of the Dividend, as you cut off Cyphen from the Divisor, and divide the remaining Figures toward the Left-hand by the remaining fignificant Figures of the

Divisor.

Example.

Divide 42952 Square Poles of Land by 160, the Square Poles in an Acre of Land.

160) 4295 2 (268	Here the Cypher is cut of
32.	from the Divisor, and 2 from
	the Dividend; then I ask how
100	oft 16 in 42; answer twice
96	then the 16's in 109, answe
	6 times; then the 16's in 195
135	answer 8 times. So there an
128	268 Acres, and 7 remains
-	that is 268 Acres, 7 or 10
(7)	or almost half an Acre,
Divide 27/00)62746/20($2323\frac{25}{27}$ or $\frac{2520}{2700}$.

(25)

54 ..

In this Example, two Cy phers are separated from the Divisor, and also two Place from the Dividend, and the 62746 is divided only by See the Work.

Here 1 Number

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Addition,

Admit yo

12345

Divisor, make a Sixth Fig he Divi 87654 b Dividual.

The fo which ma nost Line he faid fi uct; and equent L ou come he Truth r upperm

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87648, t he Dividu Which

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When the Divisor is 3, 4, 5, 6, or more Figures, there sa sure and easy Way of performing the Work truly, by making a Table of the Divisor; which may be done by Addition, or by multiplying the Divisor by 2, 3, 4, &c. Admit you are to divide 987654321 by 123456.

123456) 987654321 (800 987648···	o Times.	123456
(6321)	, 2	246912
Was basing asset she	3	370368
Here having noted the Number of Figures in the Divisor, which here is 6,	4	49,824
make a Point under the sixth Figure, or Place of	2	617280
he Dividend, whereby	6	740736
Dividual.	7 9	864192
	8	987648
	9	1111104

The foregoing Table is made by doubling the first Line, which makes 246912; this added to the first or uppernost Line, gives the 3d Line 370368; which also added to the said first Line, makes 493824 for the 4th Line or Product; and so of the rest; still remembring to add the subsequent Line or Product to the first or uppermost Line, till ou come to the last Line of 9 Times, which is 111104; the Truth of which may be proved by multiplying the first ruppermost Line by 2, 3, 4, 5, &c. and if you commit in Error by Addition, it may be found or corrected by Mulpication.

The Use of the Said Table.

When you have pointed out your Number of Places in the Dividend, cast your Eye on the Table, and at the first liew you may know how many times you can take, as this Example 7 times is too little, and 9 times too such; wherefore I set down 8 in the Quotient, and place 187648, the tabular Number which stands against 8 under the Dividual, then I subtract that Number from the Dividual.

vidual, and the Remainder is 6; to which I bring do 3, and put o in the Quotient; then to the 63, I bring do 2, and place o in the Quotient; then to 632 I bring do 1, the last Figure of the Dividend; but still it will not be any Times or Time, wherefore I put another oint Quotient, and so the Work is done, and the Quotient 8000, and the Remainder 6321; as in the Work.

Thus having plainly, fully, and pertinently thewn. verbal Directions, the Method of working Division; think it unnecessary to give any more Examples in the Manner, but shall leave some few Examples for Pratie fake, whose Quotients and Remainders are expessed, I the Operation omitted, to fave Room, and for Trial of Ingenuity of Practitioners.

7400690042 divided by 987, the Quotient is 7498166, 1 Remainder 200.

479679002742 divided by 4689, the Quotient is 10229878 and Remainder 4566.

7969-67002 divided by 976294, the Quotient is 816 and Remainder 279080.

456789012345 divided by 9876543, the Quotient 46249, and Remainder 8775138.

764697 by 4500, quotes 169, and Remainder 9127. A 8092320000 by 345000, quotes 23456, and remains (

The Proof of Multiplication and Division. THESE two Rules reciprocally prove each other for in proving Multiplication, if you divide the h duct by the Multiplier, the Quotient will be the Mi tiplicand; or if by the Multiplicand, the Quotient will the same with the Multiplier.

. MIF	m me municipi	IC1.	14 (4)
•	345	Ex. 2.	Or thus,
	1380	34	5) 8280 (24
24	8280 (345		690.
	108		1380
	96		(0)
	120		
	(0)	in	

will be

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The Young Man's best Companion. 103

To prove Division.

Division may be proved by Division, thus:

If you divide the Dividend by the Quotient, the Quotient will be your former Divisor.

Example.

Divide 8280 by 345.

347) 8280 (24

Here the Working again is needless, it being in the Page foregoing; shews the Truth of the Assection, that Division

may be proved by Division as aforesaid.

But the most usual Way of proving Division is by Multiplication in this manner, viz. Multiply the Quotient by the Divisor, and the Product will be equal to the Dividend. See the Example in the foregoing Page.

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Note, That when there is any Remainder, such Remainder must be taken in, or added to the Product.

8280 Proof.

As in Multiplication I gave some Examples of its Utility in Money, so likewise I shall give a few Examples in Divison of Money; whereby may be seen how expeditionsly some
Things may be done, without having recourse to Reduction,
the Rule of Three, &c. viz.

Example 1.

Divide 26 l. 12 s. 6 d. equally among five Men: For Disposition of Working, set it down as follows:

5) 26-12-6

In the working of this, I fay, the
5's in 26, 5 times; 5 times 5 is 25, from
5-06-6

26, and there remains 1, that is, 1

Pound, or 20 Shillings; which with
the 12 s. in the Place of Shillings,

the 125. in the Place of Shillings,

Proof 26—12—6 makes 325. then the 5's in 32, 6

times; 6 times 5 is 30, from 32, and
there remains 25. or 24 d. which with 6d. in the Place
of Pence, makes 30; then the 5's in 30, 6 times; and fo
the Work is done, and the Answer is, that each Man must

FA

have

have 1. 5—06—06 his equal Share in the faid Division of 1. 26—12—6 amongst five Persons; and the Truth of a is proved by Multiplication of Money, sufficiently shewn in the Rule of Multiplication; as here, 5 times 6 is 30; 6 and carry 2; and 5 times 6 is 30, and 2 is 32; 12 and carry 1; and 5 times 5 is 25, and 1 is 26, 5%.

Example 2.

Divide the Charges of a Country Feast, amounting to 1. 246—13—4 equally amongst 12 Stewards, to know what each Steward must pay.

12) 246—13—4 twice, and 12's in 6, 0 times, and there remains 6!. or 1201.

Answer 20—11—14 and 13s. makes 133; and then the 12's in 133 is 11, and there

once, and 4 remains; so that each Steward must pay 1. 20—11—1 2 or four twelfths of a Penny, something more than a Farthing; and this may be proved as that above.

When any Quantity is such a Number that any two Digits of the Multiplication Table, multiplied together, make the said Quantity or Number, then the Quotient may be very expeditionsly sound at two Divisions, and sooner than at one. Example. Divide 7872 by 32. In this Example, the component Parts, which, multiplied together, make the Divisor 32, are 4 and 8, or 8 and 4; for it matter not which of them you divide by first; for either way will give a true, and the same Quotient; as may be seen by the different Methods of the following Work.

4) 7872		Or	thus,	8)	7872
8) 1968	200			4)	984
246 Quotient.					246 Quotient.

Here though the Operations are divers, yet the Quotients are one and the same. Again, divide 44184 by 56.

Here to both w And th

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v.z. mult take in or the Prod you divid

3) 45

5) 15

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Enfaver

By this as aforest having t

Example 2.

7) 44184-

8) 6312

789 Quotient.

Here the Divisors are 7 and 8, or 8 and 7; for either both will give the same Quotient.

And thus may above forty Examples be wrought by Numbers out of the Multiplication Table, with great Dispatch and Expedition, as by 15, 18, 25, 35, 64, 72, 96, &c.

When it happens that there is any Remainder in the first Division, or the last, or both; to know the true Remainder is if you divided by the common Way, take this Method, with multiply the first Divisor by the last Remainder, and take in or add the first Remainder, if there be any, and the Product will be the true or same Remainder as if you divided by the long Way. Example; divide 4567 by 15.

3) 4567 5) 1522—I

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Here I multiply 3, the first Divisor, by 2, the last Remainder, and take in 1, the first Remainder, and it makes 7 for the true Remainder, as may be proved at leisure by the other Way.

The same Method may be taken with respect to component Parts in Division of Money, as in Division of simple: Numbers.

Example.

3) 1. s. d. Divide 463-18-06 into 18 equal Parts.

6) 154-12-10

Enfaver 25-15-05

By this Method of Division of Money (if the Quantity be a aforesaid made by even component Parts) you may, by having the Price of several Things, know the Price or Va-

lue of one Thing, at the faid Rate, as well as by the & of Three : So doth Multiplication of Money answer Quelin in the Rule of Three when the first Number is a Unit Cne.

Example by Division.

7) 1. s. d. If 84 lb. of Coffee cost 31-10-0 what costs 1 lb.

12) 4-10-0

Answer 0-07-6 a Pound.

As in the Multiplication of Money, to have an Animo you multiply the Price by the Quantity, fo in Division Money, you divide the Price by the Quantity, to have you Answer.

I could speak more largely, if I had Room, of them cellent Uses that may be made of Multiplication and Di wiften only; but their various Uses will be better underfor by their Application in the following Rules of Arithmeth particularly in the next Rule, called

REDUCTION;

7HICH is an Application of Multiplication and D vision, shewing how to reduce Numbers of one De nomination to another, thereby discovering the same Value tho' in different Terms.

1. As first, All Great Names are brought into Smaller Multiplication, as Pounds into Shillings, Pence, or Fa things, by multiplying by 20, 12, and 4. Or Hundre Weights into Pounds Weight, by multiplying by 4 and 28, or by 112; or lower, into Ounces or Drams, by mult plying by 16 and 16.

2. And, on the contrary, All Small Names are brough into Greater by Division; as Farthings into Pounds, by d viding by 4, 12, and 20; and Pounds Weight into Hu dreds Weight, by dividing by 28 and 4; the Drams in Pounds, by dividing by 16 and 16.

But you may note, That Pounds are brought into Pend by multiplying by 240; or into Farthings by multiplying by 960; and just the contrary by Division,

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The Sense, Meaning, and Use of Reduction, is expressed in the following Verses,

Reduction shews how we of Names in Use,
May Great to Small, and Small to Great reduce;
So that the Answer which shall thence arise,
Ite given Sum in Value equalize;
Multiply, or divide it, back you must;
Which makes again your given Number just.

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Example 1.

In 240 l. Sterling, how many Pence? 20 Shillings 1 Pound.

	4800 Shillings in 240 /.	240 l. 240 d. in a L.
Anf.	57600 Pence in 240 /.	9600
1		480

Answer 57600

Example 2.

In 226 Tuns of Copper how many Pounds Wt ?

ar vertile in the life of	Or thus,
4520 Hund. Wt. in 226 Tuns	226 Tuns.
4 qrs 1 C.	20.

4 qrs 1 C.	reli balace	2 - 0	20
was a way by	Station Co.	the second	THE TOTAL
18080 are of a C	Wt in 226'	Tone	F.00

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	-
144640	54240
36.60	4520

506240 Pounds Wt. in 226 Tuns. 506240

These foregoing Examples are Great Names to be brought into Small (as may easily be observed and understood;) therefore, as the first Rule directers, it is done by Multiplication, by multiplying the greater Name by the Number of the next lesser Name that makes one of the said greater; as in the last Examples the lesser Name to Pounds is Shil-

lings :

lings; wherefore I multiply by 20, because 20 of that lesser Name make one of the said greater Name, i.e. 20 Shillings make a Pound. And the tame Regard is had, and Method observed, in the Example of Weight; as is very plain to be seen in the Work, and is called Reduction Descending, because it brings higher or greater Denominations into lower or lesser.

A)		ample 3.	District Control
Bring 12)	494400 Farthings	96 0) 49440 0	us, (515 l.)
2(0)	1030 0 Shillings.	480	In this Way
	515 Pounds.	95	960 the Far- things in a
	· · · · · · · · · · · · · · · · · · ·	480	Pound, &
		(0)	

In the first Way I divide the Farthings by 4, because of them make a Penny, and the Quotient is Pence; then these Pence I divide by 12, because 12 of them makes Shilling, and that Quotient is Shillings; which Shillings ! divide by 20, to bring them into Pounds, thus: I cut of the Cypher in the Dividend towards the Right, for the Cypher that is in the Divisor 20, which is also separated from 2 with a Dash of the Pen (as may be feen in the Work;) then I halve the Figures one by one, as they are united with the Remainder in the Dividend; which halfs Pounds, and is a short Way of dividing by 20: In the Example I fay, the half of 10 (because I must not set down o at the Beginning) is 5, and the half of 3 is 1, and there remains , which makes the next, which is o, 10; and the half of 10 is 5: So that 10300 Shillings make 515 Pounds, or there are so many Pounds in 294400 far things.

Note, In dividing by 20, as above, if any thing remains, it must be joined or annexed to the Figure of Cypher cut off; as suppose there had in halving the last Figure (excepting what you cut off) remained 1; then that!

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must have been joined to the Cypher separated or cut off, and there would nave been 10 Shillings.

Example 1.

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Reduce 27552 Pounds Weight into Hundreds Wt.

28)	27552	4) (984	Or	thus,	
-	252	246 C. Wt. Answer.	11.2)	27512	(246. Anf.
	235		4 1 1 1	224	
	224		1110	-	18.5
			- 6 2	5.15	Asisa
	112			440	
	11.2		1	6	
,	(0)			672	

In the first of the two foregoing Examples, I divide the Pounds by 28 to bring them into Quarters; then I divide those Quarters by 4 to bring them into Hundreds Weight, as in the Work.

In the second Way, I divide the Pounds Weight by 112, the Pounds in a C Weight, and it brings the Pounds Weight into Hundreds Weight at once.

The faid Examples are of small Denominations to be brought into Greater; and therefore according to the second Rule of Direction, it is done by Division, by dividing the lesser Name by as many of them as make the next greater Name; that is by 28, because 28 of them make one of the next greater Name; viz a Quarter of a Hundred; and this Reduction is called Reduction Ascending, because it brings low or small Names to higher or greater Denominations—By which may be observed; That all Questions in Reduction, whether Ascending or Descending, are answered either by Multiplication or Division, or by both; as will plainly appear in the sundry Examples of Reducing of divers Denominations to others.

When it is required to reduce Numbers of several Denominations by Reduction Descending, or by Multiplication, you are to work as before; but you must always remember to take in such Numbers as stand in the Place of the next

inferior.

inferior Denomination, as when you multiply the Pourby 20, if there be any Shillings in the Denomination Place of Shillings, you must take them in: So likewing when you multiply the Shillings by 12, if there be a Pence in the Place of Pence, you must also take them in And so when you multiply the Pence by 4, to bring the into Farthings, you must take in the Farthings, if there is any, in the Place of Farthings, as in the following Work, Example 5.

In 346—16—9½ how many Farthings?
20 Shillings 1 Pound.

6936 Shillings in 346 1. 16 s.

83241 Pence in 346 l. 16 s. 9 d. 4 Farthings 1 Penny.

332066 Farthings in 3461. 16s. 9d. 3

The Example is so plain in the Work, that it hardly need any Explication; but I begin to say 0 is 0, but 6 in the Units of Shillings is 6; then twice 6 is 12; and 1 in the Tens of Shillings is 13; 3 and carry 1; and twice 4 is 1 and 1 is 9; and twice 3 is 6; then by 12, saying 12 time 6 is 72, and 9d. (in the Place of Pence) is 81; 1 and carry 8; and 12 times 3 is 36, and 8 is 44; 4 and carry 4; and 12 times 9 is 108, and 4 is 112; 2 and carry 11; and 12 times 6 is 72, and 11 is 83, &c.

Example 6.

C. qrs. 1b. 56-2-16 of Tobacco, how many Pounds 4 qrs. 1 C. (Weight

226 qrs. in 56 C. 2 qrs. 28 lb. 1 qr. of a C.

1814

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Anfav. 6344 Pounds Wt. in 566. 2 grs. 161.

In the and take by 28, the odd tiply by Place of 6344

done b C. Wt. 72 Pour

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In the foregoing Work, I first multiply the 56 C. by 4, and take in two Quarters; and then I multiply the 226 qrs. by 28, faying, 8 times 6 is 48, and 6 (the Unit Figure in the odd Pounds) is 54; 4 and carry 5, Ge. Then I multiply by 2, faying twice 6 is 12, and 1, (that flands in the Place of Tens in the odd Pounds) is 13; 3 and carry 1, &c. Then adding the two Products rogether, they make 6344 Pounds, contained in 56 C. 2 grs. 16 lb. as in the Work is conspicuous. Or, the Example may be sooner done by multiplying the 56 C. by 112, the Pounds in a C. Wt. and taking in the odd Weight, viz. 2 grs. 16 1b. or 72 Pounds at once.

56 112 672 56,72 odd Wt.

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I say here, 12 times 6 is 72; 2 and carry 7; and 12 times 5 is 60, and 7 is 67; then once 6 is 6, fetting it down in the third Place, because by multiplying by 12 at once, two Places are taken up; See the Work.

Or, still briefer thus, by fetting down the 56 C. four feveral times, in the following manner; taking in the odd Weight as before.

> 56 C. 16,72

The same as above, viz. 6344 Pounds.

Reduction Afcending,

Is the bringing Numbers from a leffer Denomination to a greater, and is the Reverse of Reduction Descending; and each may serve as a Proof to the other, one being performed by Multiplication, and the other by Division.

And note, That when at any time in Reduction Defcending you take in, or add to, the odd Money, Weight, or Measure, as you multiply the several Denominations, such Quantities will be Remainders in Reduction Afcending.

Examples

112 7	L. W 14 12 11-1 10 10
	be Young Man's best Companion.
	Examples by the two foregoing Sums.
4)	- dampies by the true foregoing sums.
In 432	966 Farthings, how many Pounds?
	3241-1 d. remains what taken in.
	93,6—9 d. remains what taken in.
2,0,0	
	346-16 s. remains what taken in.
and is a fure	28) 6344 (226 grs.
	. 56
	7.4 5.6 C. 2 qrs. taken in:
	184
	168
	(46) remain Pounds taken in.
Now follo	he foregoing Examples descending to be right. ow promiscuous Examples of both kinds of Re- proving the other.
21 2/0	1. 12 s. how many Pence?
20	12
	In 66384 d. how many Pounds?
5532 12	In 66384 d. how many Pounds?
5532 12	In 66384 d. how many Pounds?
20 5532 12 Ans. 66384 In 47964	In 66384 d. how many Pounds? 20553 2 d. Anj. i. 276-12 and Proof. Grains, how many Pounds Trof?
20 5532 12 Anf. 66384 In 47964 24) 47964	In 66384 d. how many Pounds? 20,53 2 d. Anj. i. 276-12 and Proof. Grains, how many Pounds Trof 2 20) (199 8 2)99-18 Pwts.
20 5532 12 Ans. 66384 In 47964 24) 47964 24 1 239 216	In 66384 d. how many Pounds? 20,553 2 d. Anj. i. 276-12 and Proof. Grains, how many Pounds Trof? 20) (199 8 2)99-18 Pwts. In 8 lb. 3 oz. 18 pw. 12 gr. Anfaver, how many Pounds Trof? [ny Grains]
20 5532 12 Anf. 66384 In 47964 24 1 239 216 236	In 66384 d. how many Pounds? 20,553 2 d. Anj. i. 276-12 and Proof. Grains, how many Pounds Trof? 20) (199 8 2)99-18 Pwts. In 8 lb. 3 oz. 18 pw. 12 gr. Anfwer, how many Pounds Trof? [ny Grainst
20 5532 12 Ans. 66384 In 47964 24) 47964 24 · 1 239 216 236 216	In 66384 d. how many Pounds? 2 0 553 2 d. Anj. i. 276-12 and Proof. Grains, how many Pounds Trof? 20) (199 8 2) 99-18 Pwts. In 8 lb. 3 02. 18 pw. 12 gr. Anfwer, how miles for the second of the
20 5532 12 Anf. 66384 In 47964 24 1 239 216 236 216 204	In 66384 d. how many Pounds? 20)553 2 d. Anj. i. 276-12 and Proof. Grains, how many Pounds Trof? 20) (199 8 2)99-18 Pwts. In 8 lb. 3 02 18 pw. 12 gr. Anfaver, how many Pounds 12 [ny Grains] 99 20 1998
20 5532 12 Ans. 66384 In 47964 24 1 239 216 236 216 204 192	In 66384 d. how many Pounds? 2 0 553 2 d. Anj. i. 276-12 and Proof. Grains, how many Pounds Trof 2 20) (199 8 2) 99-18 Pwts. In 8 lb. 3 02. 18 pw. 12 gr. Anfwer, how miles 12 [ny Grainst 1998 20 1998 24
20 5532 12 Anf. 66384 In 47964 24 1 239 216 236 216 204	In 66384 d. how many Pounds? 2 0 553 2 d. Anj. i. 276-12 and Proof. Grains, how many Pounds Trof? 20) (199 8 2) 99-18 Pwts. In 8 lb. 3 0 2 18 pw. 12 gr. Anfwer, how many Pounds Trof? [ny Grainst 1998 24 7994
20 5532 12 Anf. 66384 In 47964 24 1 239 216 236 216 204 192 Gr. (12)	In 66384 d. how many Pounds? 2 0 553 2 d. Anj. i. 276-12 and Proof. Grains, how many Pounds Trof 2 20) (199 8 2) 99-18 Pwts. In 8 lb. 3 02. 18 pw. 12 gr. Anfwer, how miles 12 [ny Grainst 1998 20 1998 24

In 45 nd wha

Bring 4

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Reduce livide by

4) Yds.

Man's haft Come

34	112)	w many Pounds? 3892 134 C. 3 Proof.
34		336.
34:84	hall of a	532
3892 Pounds.		448
0.		(84) lb. or \$ of a C.

456 C.	Or thus.
456	. C.
456	456
51183 Pounds. 21 d. per lb.	456
51183	LIII
102366	51183

1074843 Pence; which bring into Pounds by Division or Reduction Ascending, as before shewn, and it will amount to 1. 4478: 10: 3.

Bring 4796 Ells Flemis into Ells English; multiply by 3, and divide by 5, because 3 Quarters make an Ell Flemilt, and ; an Ell English.

5) 14388

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in. . 16%. right. of Re-

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Reduce 456 Ells English into Yards; multiply by 5, and ivide by 4, thus:

456 English Ells.

5 qrs. 1 Eng. Ell. In 570 Yds. how many Eng. Ells? 4 qrs. Yd.

2280 qrs. 5) 2280 570 Anfwer.

English Ells 456 Answer and Proof.

Bring

The Young Man's best Companion. 114 Bring 130 Tuns of Wine into Gallons. 4 Hogsheads 1 Tun. Reduce ey, the E Or thus. 252 Gallons 1 Tu 520 63 Gallons 1 Hogshead 130 Tuns 1560 7560 3120 252 Auf. 3 2760 Gallons. 32760 Lafts. Quarters. Bufbels. Pecks. -2 into Pecks. Reduce 42-3-10 grs. 1- Laft. Redu Here I multiply by 10,11 take in 3 grs. and thenby 423 8 Bushels 1 gr. and take in 5-Bufbels; lattly by 4, and take in 3389 Pecks. 4 Pecks 1 Bushel. 52) 13558 Pecks in 42 Lafts, 3 Quarters, 5 Bulle 2 Pecks.

In 13558 Pecks, how many Lasts, &c.?

Answer 42 Lasts 3 Quarters 5 Bushels, and 2 Pecks.

Foreign Coins or Exchanges may be reduced to Sterli

Money; and on the contrary, Sterling Money to Foreg

By Reduction also,

8) 3389-2 Pecks taken in.

1 0)42|3-5 Bushels taken in. Lasts 42-3 Quarters taken in.

talls said their work to

To :

the Per 331. 4d

what re

331.

12

400

541. 3 920 1

Examples.

Reduce 246 Venetian Ducats de Banco into Sterling Motey, the Exchange at 52d. Sterling per Ducat, thus:

52

1230

12) 12792

20) 1066

1. 536 To be paid in Eondon, for the 346 Ducats drawn in Venice.
Reduce 531. 61. Sterl. into Ducats at 52d. Sterl. per Ducat.

20

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52) 12792 (246 Ducats to be paid in Venice for 531. 6s.

23 &c.

To reduce Flemish Money into Sterling Money, divide the Pence Flemish by the Course of Exchange, suppose 331. 4d. and the Quotient will be the Sterling Money; and what remains multiply by 20, &c.

In 242 l. 13 s. 4 d. Flemish, how many 20 Pounds Sterling, &c. ?

331. 4d. Flomifo. 4853

4100) 582140 (145

Remains 240

4|00)48|00(12

Answer 1451. 121.

By

By the Work it appears, that 145 l. 12 s. Sterling, a fwers or is equivalent to 242 l. 13 s. 4d. Flemish, at 331.

Flemish, per Pound Sterling.

Thus Flemish Money may be reduced to Sterling Money though the Course of Exchange be at any other Rate of Shillings and Pence Flemish: But when at the Rate about viz. 335 4 d. then the Answer is sooner sound by multiplying by 3, and dividing by 5; for 400 d. Flemish to 240 d. Sterling (each being a Pound) as 5 is to 3; for you divide 400 by 5, it quotes 80: So 240 divided by quotes the same.

The foregoing Example done by the last proposed Wa

1. 242-13-4 Flemish: 3. 5) 728-00-0 1. 145-12-0

In 426 French Crowns, each 54d. 4 Sterling, how man Pounds Sterling?

426
54

1704
2130 $106\frac{2}{4}$ or $\frac{1}{2}d$ 12) 23110 $\frac{1}{2}$ 2|0) 192|5: $10\frac{1}{2}$ Ani. 1 96: 5: $10d.\frac{1}{2}$

In this Example the Number of Crowns is multiplied by 54d. and for the \$\frac{1}{4}d\$ I take the 4th Part of 426, which is soof a Penny, or a Halfpenny which added to the other Penagives for Total 23110d. which divided by 12, quotes 1925, and 10d. remains; so the Answer is 96 l. 5s. 10d. \$\frac{1}{2}\$ Starling: As in the Work.

Again, Bring 1600 Pieces of Eight, at 54d. Sterling, into Pounds Sterling.

An

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1600

6400

400

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penny r Pena which 1925 the AnHere the 1600 Pieces of Eight are multiplied by 54, to bring them into Pence; and for the \$\frac{1}{4}\$ I take the \$\frac{1}{4}\$ of 1600, \$\frac{1}{6}\$c. as in the Work. And the Answer is \$\frac{1}{6}\$. \$361:13:-4.

361:13:4 This Metho

This Method is of Use in reducing the Exchanges of Cak, Leghern, and Genoa. Or when the Exchange is at so
any Pence and Eighths of a Penny, (as often the Exanges run) then multiply the given Number to reduce it
to Pence, by the Pence contained in a Piece of Eight; and
so multiply the said given Number apart, by the Numerar or upper Figure of the Fraction, and divide by the Deminator or under Figure of the Fraction, and the Quoent will be Pence; which add to the other Pence produced
y multiplying the given Number by the Pence contained
one of the Picces for Exchange; then divide the total
ence by 12, &c.

Bring 296 Dollars, at 52d & Sterling, into Pounds wring. 296

52	12-1-121	
5.92 1480	2	96 Dollars.
15392	8) 14	80
12) 15577	1	85
7 3377		1.00

201298:1

Answer 1. 64: 18: 1

Sterling Money due for 208' Dollars, at 52d & Sterling per Dollar.

1600

terling

4

But

But Ducats, Dollars, Crowns, Millreas, &c. are no expeditiously cast up by the Rules of Practice hereaster be shewn.

And so much for Reduction: The next Rule in dis

The GOLDEN RULE, or Rule of THRE

T is called the Golden Rule from its excellent Person ance in Arithmetic, and in other Parts of Mathimetic

Learning.

And it is called the Rule of Three, because from the Numbers given, proposed, or known, we find out a soun Number required, or unknown, which bears such Proportion to the third as the second doth to the first Number From whence also it is called the Rule of Proportion.

And of this Proportion there are two Sorts; one call

Direct, and the other Indirect, or Reverfe.

Direct Proportion is, when the second and third Number are to be multiplied together, and their Product divided the first.

Indired, or Reverse Proportion, is, when the first and a cond Numbers are to be multiplied together, and their Proportion

duct divided by the first.

In Direct Proportion, the fourth Number, or Anim to the Question, contains the third Number as often (or many times) as the second contains the first.

But, in Indired Proportion, the greater the third Numb is, the less is the fourth; and the lesser the third Numb

is, the greater is the fourth.

The Stating the Queftion.

The chiefest Difficulty that occurs in the Rule of Ihru, the right placing the Numbers, or stating the Question For when that is done, you have nothing more to do, bo

to multiply and divide, and the Work is done.

And to this End, we are to remember, that of the thre given Numbers, two of them are always of one Name of Denomination, and the other Number is ever of the fam Name with the fourth Number or Answer required; as must always be the second or middle Number: And to Number that asketh the Question, must still possess the this or last Place; and the other Number of the same Name with third, must be the first Number: For, the first and the Numbers must always be of one Name, viz. both Money

Weigh be of o ion, from reduced , That al Denos nds, Shi Farthin then mu if one but of educed a suppose t third No ibings a abers tog the Pr ing will u with ion, it m the bette t if the

> f 12 Ga lens cof

Gallons If 12—

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Weight, both Time, or both Measure. And tho' be of one Kind, yet if one of them is altered, by Reion, from a high to a lower Name, then the other must educed to the same Name. For you must particularly That if either the first or third Numbers confist of seal Denominations, that is, of Pounds and Shillings; or ads, Shillings, and Pence; or of Pounds. Shillings, Pence, farthings; or of Tuns, Hundreds, Quarters, and Pounds, then must they be reduced to the lowest Name mentioned. if one bappen to be of divers Denominations, and the but of one Name; then the Number of one Name must uduced as low, or into the same Name with the other : Suppose the first Number is brought into Farthings, then third Number, though but Pounds, must be brought into ibings also. Then you are to multiply the second and third bers together, (when the Proportion is Direct) and dithe Preduct by the first Number, and the Quotient thence ing will be the Answer to the Question, and in the same with the middle Number: And if in a small Denomion, it must be brought by Division to the bighest Name, the better under flanding the Anfewer. You must also note, tif the middle Number be of several Denominations, it be brought into the lawest mentioned.

Example 1.

f 12 Gallons of Brandy cost 4 l. 10 s. what will 134

Gallons If 12	Stated for work 1. 5. 4 - 10 -	Gallons 134
	90	12) 12060
		200 100 ;
		1. 50-5 Answer

here the first and third Numbers are of like Names, viz. h Gallons: and 134 being the Number that asked the stion, it hath the third Place, as it always must, as betasserted, and 41. 10 s. the second Number, being of Denominations, viz. Pounds and Shillings, it is reduced the lowest mentioned, viz. Shillings, as before directed.

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and then the three Numbers are these, viz. 12-90-13 and 134 the third Number, being multiplied by 90; the cond Number, produces 12060; which divided by 12, first Number, quotes 1005 which are Shillings, because the middle Number, were Shillings: and 1005 Shilling divided by 20, gives 50 l. 5 s. for the Answer: And the Proof of its Truth, state it back again thus;

Gal. 1. s. Gal.

If 134 cost 50—5 what 12?

20

1005

12

134) 12060 (90 s. Answer, or 41. 10s. 1260 Cost of 12 Gatlons, and is a

back stating and working the Proof is as much a Quel in the Rule of Three as the first.

By the foregoing Rules and Directions, and these to Operations, you may understand the Nature of the Rule, Method of working, and with Ease and Certainty and any Example proposed in the Rule of Three direct: A therefore I shall omit what I can of verbal Directions, abate as much of Figure-work as is consistent with Displand of not leaving the Work too obscure; to save room, not to be too prolix; and to this End, I shall only give Examples stated, and a little of the Work, and the Ansato the Questions, leaving most of the Operations to be formed by the ingenious Practitioners.

If 56 lb. of Indico cost 11 l. 4 s. what will 1008 lb. at that Rate?

1b. s. 18

If 56-224-1008? Answer 4032 s. or 201 l. 121. Example 4.

If half a C. Wt, of Copper cost 4 1. 18 s. what Que tity will 14 s. buy at that Rate?

If 98 buy 56, what 14? Answer 8 lb. of Copper. Example 5.

Hogheads come to, weighing 42 C. 1 gr. 14 lb.

If 532-13. 1 d. 064; W Halfper Any of back-ftand each

16.

If I have or 144 Days.

If 365-

hree, as

In this Number ing to the Number,

lied by 2 ivided by a Rema roduct di

er 90; and divided that the You are reducible bove, it

Note, al n Unit, of Multiple

If I am tust I give the.

If 1 ---

If I buy

Bas

If ;32-1387-4746? Answer, 12373 Pence, or 511. 11.1d. And the Remainder, 266, multiplied by 4, gives 064; which also divided by the first Number, 532, gives Halfpenny more; fo the whole is 51 1. 11 s. 1 d. 1.

Any of these Examples, or any other, may be proved by back-flating, according as the first Example was proved; nd each Proof becomes another Question in the Rule of

larce, as was faid before. Example 6.

If I have 50 l. a Year Salary, how much is due to me or 144 Days Service at that Rate?

Days. 1. Days.

If 365-50-144? Anfewer, 1. 19-14-590 Parts of a

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In this Example, the Product of the third by the fecond Sumber is 7200; which divided by the first 365 (accordg to the Rule) quotes 19 Pounds the Name of the middle Sumber, and there is a Remainder of 265; which multilied by 20, according to Reduction, and the Product still ivided by 365, there comes out 14 Shillings, and yet there a Remainder of 190, which multiplied by 12, and the roduct divided by 365, gives 6d. and there's a Remainer 90; which if multplied by 4 (the last inferior Name) addivided by 365, yet would not come to a Farthing more: that the Answer is as above, 1. 19-14-690.

You are to note always, That when any thing remains that reducible to an inferior or lower Name, after multiplied as hove, it must continually be divided by the first Number.

Note, also, When the first of the three given Numbers is "Unit, or One, the Work is performed, or Answer found,

Multiplication.

Example 7. If I am to give 17 s. for 1 lb. of Belladine Sik, what tust I give for 264 lb. at that Rate?

16. s. 16. If .1---264

> Answer 4488 or 224 1, 81. Example 8.

WI buy 49 Bags of Hops at 121, 121. 6d. per Bag. hat come they to at that Rate?

This Example is wrought by Division of Money, and component Parts; as before taught in the Rule of Division

0-14-6d. Anfwer.

Example 11.

If A. owes B. 2961. 175. and compounds at 75.64. the Pound; what must B. take for his Debt?

If. 20-90-5937 Answer 1. 111-6-4.

Example 12.

If a Gentleman hath an Estate of 500 a Year, who may he expend daily, and yet lay up 12 l. 153. per Month

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First multiply 121. 151. by 12, the Months in a Year, dir makes 1531. which deducted from 5001. the Reainder is 3471. Then say,

Pent Boards lin & Days : Land

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Month

If 365—347, what I Day? Answer 191.
After you have reduced the Pounds into Shillings; which ake 6940, you divide them by 365, and the Quotient is 1. per Day.

he Rule of Three Reverse; or of Indirect Proportion.

WHAT Indirect Proportion is, has been hinted al-

In Direct Proportion, the Product of the First and Fourth unbers, is equal to the Product of the Second and Third. But, in this Proportion, the Product of the Third and outh Numbers is equal to the Product of the First and cond.

The Method of stating any Question in this Rule, is the ne with that of the Direct Rule.

For the First and Third Numbers must be of one Name, so reduced, as in that Rule; and the Number that wes the Question must possess the Third Place; and the iddle Number will be of the same Name with the Aner, as it is there;

To know suben the Question belongs to the Direct, and bin to the Roverse Rule

When the Question is stated as abovesaid, consider when the Answer to the Question ought to be, more or less in the Second Number; if more, then the lesser of the stand Third Numbers must be your Divisor.

But if less, then the greater of the two extreme Num-

And if the first Number of the Three is your Divisor, in the Proportion is Direct; but if the last of the Three your Divisor, the Proportion is Indirect or Reverse.

Or without Regard either to Direct, or Reverse;
If more is required, the Leffer;
If less, the Greater

G 2

Examples

Examples for Explanation,

Example 1.

If 4 Men plane 250 Deal-Boards in 6 Days; how many Men will plane them in two Days?

If 6 Days require 4 Men, what 2 Days? Anjaw. 12 Men

rog divide them. by to

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2) 24

White of There Receiving Angwers Proportion

Incided Proposition is, has been hinted at-Example 2.

If a Board be 9 Inches broad, how much in Length wi pich, is country. make a fquare Foot? ht. in this Proposition, the Prof. Int.

In B.

-12, what o Inches bread? The Method of Paring any Quedien for this Pole, is the

with that of the Line 2 wilder 144 160 beaute 160 160 160 160

Answer 16 Inches in Length.

In these Examples, the first and second Numbers multiplied together, and their Product is divided by Third; for, in the first Example, it is most certain, 2 Days will require more Hands to perform the Wo than Days; therefore the leffer of the extreme Numb is the Divisor; and declares the Question is in the Indi Proportion.

Likewise, in the second Example, 9 Inches in Bres must needs require more in Length to make a Foot, 12 Inches in Breadth; wherefore it is in the fame Pro sion with the first Example, because the Divisor is

Whiteon Regard either to Theed, or Theodor

goes is required. the Letter of in the Mich

Third Number. We Division the Properties is learned with

If a C the Buff Bushel?

If

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grs. wi

If 8-

If in what Pri

N this Sixth the Four the Produ Queftic

by the Ru one may Example

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Example 3.

How many Yards of Sarcenet, of 3 grs. wide, will line yards of Cloth, of 8 grs. wide?

grs. wide.

Jds. long.

grs. wide.

11

Here the narrower the Silk the more in Length is required.

Yards 24 Anfaver.

many

Men

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n, d

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Example 4.

If a Quartern Loaf weigh 4 18 3 when Wheat is 5 1, 6 d: the Bushel; what must it weigh when Wheat is 4 1. the Bushel?

d. Half lb. 16.

Example 5. 1 155

If in 12 Months 200 /. Principal gain 5 Pounds Interest 2 what Principal will gain the same Interest in 5 Months?

M. 1. P. M.

Answer, 240 L. Principal.

The Double Rule of Three Direct

ed what will a Month gain i and the

IN this Rule there are Five Numbers given to find out a Sixth, which is to be in Proportion to the Product of the Fourth and Fifth Numbers, as the Third Number is to the Product of the First and Second Numbers.

Questions in this Kind of Proportion are wrought either by two Operations in the Single Rule of Three Direct, or by the Rule composed of the Five given Numbers, and the one may be a Proof to the other; as may be seen in the Example following.

Example 1.

If 100 Pounds Principal, in 12 Months, gain 3 Pound Interest, what will 246 Pounds Principal gain in 7 Months

If 100 gain 5, what 246 Herethe mancower the Sax a Leigth it required. 1 00) 12 30 Yards an 6100 Anfaver 121.61. M. M. M.

Then fay again, if 12 gain 12-6 what 7 at a serie w to 294 diging at flown some a helios a

246 Fall it 12) 1722 20) 14/36 If in 12 Months 1001. Principa what Principal will gain the friend 1. 7.3.6

In the first Stating, the Answer is, that if 100 l. gi Pounds, then 2467, will gain 12 Pounds 6 Shillings. Then I fay in the next Stating; If 12 Months g

121. 6s. what will 7 Months gain? and the Answer 1. 7-3-6. And so much will 246 Pounds gain in Months, if 100 Pounds gain & Pounds in 2 Months,

You must particularly note, That in all Operations was the Answer to the Question is found by two Statings of Rule of Three, the Answer of the first Stating is ever middle Number of the fecond Stating; as in the precede Example. Oregions in the Main of Property

by two Operations in the Single Run of Three I wine Rule composed of the Five glace Nambers.

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that y Name or] The foregoing Question may be answered by a Stating composed of the five given Numbers, thus:

(1)	(2) , 1 (3) M. /.	(4)	(5) M.
If 100-		246-	7
12		7	1
-		1	
1200		1722	
		5	1

In this Work, the stating the Question, the First-and Fourth Numbers are made of one Name, nd the Second and Fifth; then he two first Numbers are mulplied together for a Divisor, nd the last three Numbers are nultiplied together for a Divilend, and the Quotient or Anwer is of the same Name with he Middle Number, viz. Pounds interest. In the Work I find he first Quotient 7 Pounds Inereft; and so I proceed from ne Denomination to another, Il I find the same Answer as

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the Work at two Statings, viz. 1. 7-3-6.

This Method of Operation ferves to answer all Questions the Double Rule of Three Direct.

The Double Rule of Three Reverfe.

N this Rule you must place your Numbers in such Order, that your Second and Fourth Numbers may be of one same or Denomination, and your Third and Fifth.

Example.

If 100 l. Principal, in 12 Months, gain 6 l. Interest 5 that Principal will gain 20 l. Interest in 8 Months.

1 D		ted thus:	pulot vol sfr
L.P.	Mo. (2)	1. Int.	Mo. 1. Int.
11100 -	12	(3)	(4)
12			6
1200			48 the Divisor
20			40 the Divine

48) 24000 (5001. Principal. Answer.

240

In this Work, the third and fourth Numbers are multiplied together for a Divisor; and then the first is multiplied by the second, and that Product by the fifth Number, at the Product 24000 is divided by 48, and the Quotient 500 A Principal; which is the Answer to the Quellion, may be seen in the Work.

Rules of Practice.

HESE Rules are so called from their frequent Un and Brevity in casting up most Sorts of Goods of Merchandize.

Note, That any Question in the Rule of Three, when the first Number in the Stating is 1, is more briefly done by the Rules called Practice.

But, previous to these Rules, it is necessary to have the following Tables by heart:

Parts of a Shilling,	Of a Pound.	Parts of a Pon
6 is $\frac{1}{2}$	40	10 0 0
3 4	110	5 0
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	THE STATE OF	3 4
Brood to rise as	lecte és di la	2 0

Parts of 6d. is 1 of 1s.

Her Shillin 2133.

4d. is of 13.

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Fract (the I by di W

ment the f Parts of a Shilling. Example 1.

6d. is \(\frac{1}{2} \) 426 Pounds of Sugar, at 6 d. per lb.

2|0) 21|3

1. 10-13 Answer.

J. Int.

(5)

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Here 6 d. being the Price of each 1b. and the half of a Shilling; therefore the half of 426 is taken, and gives 2131. Or 101. 131.

Example 2.

4d. is \(\frac{1}{3} \) \(\frac{5.12 \ lb.}{0f} \) of Cheese at 4d. per \(\frac{1}{3} \) \(\frac{1}{2} \) 0). \(\frac{1710 - 8 \ d.}{2} \)

1. 8-10-8 Answer.

Here 4 d. is \(\frac{1}{3}\) of a Shilling; therefore the third Part of \(\frac{1}{2}\) is 170 s. and \(\frac{2}{3}\) of a Shilling or 8 d. remains.

askings, being rudged tog

Note, Always that the Remainder is of the same Name with the Dividend, which here is Groats, for the Pounds of Cheese are at a Groat each.

3d. is \(\frac{1}{4}\) 246 Yards of Ribband, at 3 d. per Yard.

210 (6) 1-6 d.

1. 3-1-6 Anfwer.

Here the Yards are divided by 4, because 3 d is the 4t of a Shilling, and it quotes 61 Shillings, and 2 remains or two 3 Pences: So the Answer is, 1. 3—1—6.

And thus may any proposed Question be answered, be longing to the first Table, or Parts of a Shilling; that is by dividing the given Number by the Denominator of the Fraction, and the Quotient will be always Shillings, which the Remainders being known as above) bring into Pound by dividing by 20, &c.

When the Price of the Integer is at a Farthing, a Halpenry, or three Farthings more than the Value of the Penmentioned, then for thole Farthings take a proper Park the foregoing Quotient found for the Pence, and add the together.

Examples. 249 Ells of Canvas, at 4 d. 1 per Ell.

4d. is \(\frac{1}{3} \)
\frac{1}{2}d. is \(\frac{1}{8} \)
\text{of 4 d.} \quad \quad \text{10\frac{1}{8}} \text{ or 4 d. \(\frac{1}{3} \) Answer.

20913-41

4-13-41 Anfwer.

In this Example I divide by 3 for the Groats, as being the Third of one Shilling, and it quotes 83s. then I confider that a Halfpenny is the Eighth of 4d. therefore I take the Eighth Part of the Groat-Line, or 83s. and that produces 10s. and $\frac{2}{3}$ of a Shilling, or $4d \cdot \frac{1}{2}$; then the two Lines, being added together, make $93s \cdot 4d \cdot \frac{1}{2}$, or $4l \cdot 13s \cdot 4d \cdot \frac{1}{2}$, as in the Work.

Parts of a Pound.

10s. is 1 254 Yards of Cloth, at 10 s. per Yard.

1. T27 Anfwer.

Here the Half of 254 is taken, because 10 s. is the Half of a Pound.

5. d. 6-81

972 Gallons at 6 s. 8 d. per Gallon.

1. 324 Answer.

Here the third Part is taken, because 63. and 8 d. is the third of a Pound; and the Answer is 1. 324.

And thus may any Question proposed be answered, be longing to the second Table, or Parts of a Pound; that is, by dividing the given Number by the Denominator of the Fraction, and the Quotient will always be Pounds; and if any thing remains, it is always so many Halves, Thirds, Fourths, or Fifths, &c. of a Pound, according to the Denominator that you divide by.

If the Price be Shillings and Pence, or Shillings, Pence, and Farthings, and no even Part of a Pound; then multiply the given Number by the Shillings in the Price, and take even Parts for the Pence, or Pence and Parthings, and add the feveral Lines together, and they will be Shillings; which Shillings bring into Pounds, as before.

6d. 1/2 | 3d. 4

> 6d. ½ of 3d. ½ of

the give

When

Whe the Forther;

12) 468

20)39

1. 19

The Young Man's best Companion. Examples. Ells. s. d. 3. 4. 426 at 4-216 at 2-31 2 per Ell. 432 1704 213 54 1061 or 6d. 9 20) 20213-6 20) 49/5 5. 24-15 Anfwer. 1. 101-3-6 396 Gallons of Brandy at 7 s. 9 d. per Gallon. 2772 6d. 7 of 1s. 198 3d. 1 of 6d. 99 210) 30619 h 193-9 Anfaver. When the Price is 10 d only, annex o to the Right of the given Number (which is multiplying by 10) and they are Pence; which divide by 12 and by 20. Example ; 426 lb. of Hops, at 10 d. per lb. 12) 4260 20) 355 1. 17-15 Anfaver. When the Price is 11d. fet down the Quantity twice in the Form of Multiplication, and add the two Lines toge; Example.

ther; then divide by 12, and by 20.

426th. of Copper, at 11d per th. 426

12) 4686 Pence.

6d. 1/2

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The Toung Man's best Companion. If the Price be 11d. take half the uppermost Line, & Again, Example. 942 lb. of Tobacco, at 11d 1 pm 471 6d. 1S of 21. 12) 10833 Pence. 2 0) 90/2-94. Or mul for the 64 1. 45-2-9 d. Answer. When the Price is 1 s. only, divide by 20. 1041-11 Example. 20) 96 4 lb. of Tobacco, at 12 d. per lb. 1. 48-4 Anfwer. When the Price is 2 s. it is done at fight, by doubling When last Figure towards the Right-hand, and fetting it apart iply the Shillings; and the Figures towards the Left are Pounds. he first F Example. fual in N 596 Gallons of Spirits, at 25. per Gallon. Left will 1. 59-12 Answer. Here the Double of 6 is 12, and t 59 are Pounds. From this Method of working by 21. a Multitude Examples may be most expeditionsly wrought, vin. 1. 207 Ells. Yards. 444 Cambrick. Here 7 426 at 31. 6d. per Yard. .When - at 5s. 9d. he even 42-12 at 21. 44-8 at 25. te 1 of 44-8 at 2s. 1s. 1 2s. 21-6 at 11. 22-4 at 15. 6d. 1 1s. 10-13 at 6d. 11. 1 of 21. 6d. 3 of 1 s. 11-2 at 6d. 3 d. 1 of 6d. 5-11 at 3d. Anfwer, 1.74-11at 3h Answer, 127-13-at 5-9d. The Operation of these two Examples is so intelligit

wrought, that there is no need of verbal Explanation.

296

The Young Man's best Companion. 133 Again, 548 Yards of Broad-cloth, at 125. 6d. per Yard.

is e for rodicers er thee. 1. 54-16 at 21. 6 times 25. is 125.

Note, That 131. 14s. is 328-16 at 12 s. 64. 15 13-14 at 6 d. the fourth Part of 541. 16s. the two Shillings Line. of 25.

1. 342-10 Anfwer. Or multiply by 12s. and take half of the given Number for the 6d. thus : 548 Yards.

When the Price is Pen

ling; as supposed the Feb

either Parising or Peices w 6576 1 274

20) 68510 1.. 342-10 Answer.

When the Price is an even Number of Shillings, muliply the Number of Integers by half the Price, and double he first Figure of the Product for Shillings, and carry as is hal in Multiplication, and the other Figures towards the left will be Pounds.

Example. 296 Yards of Cloth, at 14s. per Yard. 7 the half of 14 Shillings. BOCK AVINCU POSLIC

1. 207-4 s. Anfewer.

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s. 6d.

Yard.

at 25. at Is. at 64.

at 3h

Here 7 times 6 is 42: the Double of 21. is 44. &c. When the Price is an odd Number of Shillings, work for he even Number as above; and for the odd Shillings, take te 10 of the given Number, and add them together.

> Example. 496 Gallens of Citron Water, at 171. per Gallon. 8 the half of 16.

> > Bont completed at 11 attilles

or istal and a medicine Port that it is see for the the the center and garage

1.396—16 s. 24—16

1. 421-12 Anfauer:

134 The Young Man's best Companion.

In this Example I fay, 8 times 6 is 48; the double of is 16s. and carry 4; then 8 times 9 is 72, and 4 is 76; and carry 7; and 8 times 4 is 32, and 7 is 39; then half of 4 is 2, &c.

I have not here Room to speak of the various and an infinite Methods and Rules of Practice (having several of Subjects and Things to treat on) but shall leave some gene Rules, which, if heedfully noted, will be of great Use

Learners; and are these, wiz.

1. When the Price is Parts of a Farthing, or of a Pen as $\frac{3}{4}$, $\frac{5}{8}$, $\frac{7}{8}$, &c. then multiply the Integers by the Nume tor, and divide by the Denominator, and the Result will either Farthings or Pence; which reduce to Pounds, &c.

2. When the Price is Pence, and no even Part of a sling; as suppose 5 d. 7 d. 8 d. or 9 d. then it may be do by taking their Parts, as 3d. and 2d. is 5d. and 4d. 3d is 7d. and 4d. and 4d. is 8d. and 6d. and 3d is 6 but it is an easy and sure way to multiply the given No ber by 5, 7, 8, or 9; and then the Product is Pence; wh

reduce to Pounds by Reduction.

3. When the Price is Pence, and Parts of a Penny 1 1d. $\frac{1}{4}$, $2d. \frac{1}{2}$, or $6d. \frac{1}{4}$, then work for the Penny by 1st the $\frac{1}{12}$; for 2d. the $\frac{1}{6}$; and for 6d. the $\frac{1}{2}$: Then for Farthings, take $\frac{1}{4}$ of the Penny Line, and for $\frac{1}{4}$, $\frac{1}{4}$ of Two-penny Line; and, for $\frac{1}{4}$, take $\frac{1}{8}$ of the 6 Penny Line and their Results together, and the Total will be 8 lings, which reduce to Pounds, by dividing by 20. On the sure Way of bringing the mixt Number into the low Denomination; as $1d. \frac{1}{4}$, into 5 Farthings; $2d. \frac{1}{2}$, 5 Half-pence, and $6d. \frac{3}{4}$ into 27 Farthings; then may 1 the Integers by 5, and the Product is Farthings; or 1 Half-pence, and the Product will be Half-pence; or by Farthings, and the Product will be Farthings; which, we ther Farthings, or Pence, reduce to Pounds, &c.

4. When the Price is Shillings and Pence, or Shillings and Farthings; multiply the Integers by the Shilling of the Price, and take Parts for the Pence, or Pence

Farthings, &c.

5. If the Price be Pounds and Shillings, or Pounds, Sings, Pence, and Farthings; multiply by the Shillings in Price, that is, in the Pounds and Shillings, and take for the Pence and Farthings.

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ngs in take f When the Number of Integers hath a Fraction anor belonging to them, as 4, 2, 4, toc. then take 4, 4, of the Price of one of the Integers, and add that to the Refults. mile gold of \$11 to it shirth bas loader

no barding to the TARE and TRETT.

mels Weight is the Weight of the Goods in Hundreds. ners, and Pounds, with the Weight of the Hogshead, , Cheft, Bag, Bale, &c. that contains the Goods. . are is allowed to the Buyer for the Weight of the thead, Cask, Cheft, Bag, Bale, &c. rett is an Allowance made for Wake, Duft, &c. in fun-Sorts of Goods, as Tobacco, Cotton, Pepper, Spices, and is always 4 lb. per 104 lb. Suttle, and found by ding the Suttle Pounds by 26, because 4 times 26 make b. When the Gross Weight is brought into Pounds, before the Tare is deducted, they are called Pounds i: and after the Tare is subtracted, the remaining nds are called Pounds Suttle; which divided by 26 (as before) quotes Pounts Trett, &c.

Tare at fo much per Cafe, Hogsbead, Bag, Ge.

e Allowances for Tare are variously wrought, as by following Examples.

12 Casks of Indico, containing 45 C. 1 gr. 14 16. is, Tare 30 lb. per Cask, how many Pounds Nett ?

> 12 Casks -C. gr. 1b. .9 13 1 1 .45-1-14 360 Pounds Tare

> > 45 4542

2082 Pounds Gros. Subtract 360 Pounds Tare.

Anfaver, 4722 Pounds Nett. his Example, the ibs. Tare of one Cafe are multiplied Number of Casks, and the Product is 360 Pounds and the Gross Weight is reduced into Pounds by the od hewn in Reduction of Weight; and then the Pounds are deducted from the Pounds Gross, and the Reer is Pounds Nett, wie 4722, as in the Work.

When

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When the Tare is at fo much pro C. out. muliple Number of Hundreds by the Tare, and take Part is odd Weight, and add it to the Tare found by Mucation, and divide it by 112 to bring it into Grefs We in order for Subtraction.

Example.

What is the Nett Wt. of 12 Casks of Argol, wt. 6
84 C. 2 grs. 14 lb.
14 Tare per C.

7 for half C. 74-0-05 Nett

112) 1184 \ (10 C.

64 18. or half a C. and 8 18.

The Tare in the last Example is to be found by the going Directions, 10 C. 2 qrs. 8 lb. \(\frac{3}{4}\), which subtract in the Work, leaves 74 C. 0 qrs. 5 lb. \(\frac{3}{4}\) for the Net But the foregoing Example may be sooner do Practice, thus:

14 1b. is & of C. 8)84 2 14 Gross of sal

fub. 10-2-083 Tare.

In this Method the Gross Weight is divided by cause 14 lb. is one Eighth of 112 lb. and the Remarked into the next inserior Name, and still divide to the End, and then deducted, as above, and to the End, and then deducted, as above, and to Weight is the same as by the other Way. And so a Tare per Cent. be found, if the Tare be an even and 16 lb. is one Seventh, and 8 lb. is the half of that is, if the Tare be at 7 lb. per C. find it for the before, and then take the half of that for 7 lb. Tare, the like for 8 lb. per C. Tare; take one ser 16 lb. and then the half of that for 8 lb. per C. Tare

What en faic anation Bough d Tare

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yet undi Twelfths e Remain

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Of TRETAL Bortholes of

What Trett is, when allowed, and hew found, hath en faid already; now I shall give an Example for Example, as follows.

Bought Six Hogsheads of Tobacco, containing Gross

C: grs. 1b. 1b.
4-1-20 Tare 80
5-2-19 100 6-3-18 102
7-1-12 104
8-2-13 106
9-1-14 110
42-3-12 602
and Mariation and
of a daniel and
and the continue of
oo Pounds Gross.
OZ Founds Tare.
98 Pounds Suttle.

deduct 101 6 Pounds Trett.

4036 7 Pounds Nett.

There are some sew other Rules, such as Barter, or exanging Goods for Goods; also Exchange for Coin, Pro-Loss, &c. but all of them being done either by the Rule. Three, or by Rules of Practice, it is therefore here untersary to enlarge upon them.

Of FRACTIONS Vulgar and Decimal.

WHAT Fractions are, hath already been hinted in the Rule of Division, from whence they arise; for the emainder is a Part of a Dividend remaining undivided; admit 54 l. is divided into 12 equal Parts, the Quonat is 4, and the Remainder 6: So that here 6 remains yet undivided by 12, and is therefore 6 Parts in 12, or Twelfths, equal to a half; for 6 is the \(\frac{1}{2}\) of 12; and a Remainders are usually set down in this Form \(\frac{1}{12}\), and

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when so, the Expression is called a Fractien, whose hare understood by these Names, viz.

6 Numerator.

12 Denominator.

The Numerator is above the short Line, and shewen Number of Parts signified by the Fraction; and the simulator stands under the Line, and declares the Num of Parts into which the Integer or whole Number is died; as above, 544 is divided into 12 Parts, and the Quality there are 4 times 12 contained in 54, and 6 rems which is 6 Twelsths of a Pound, or 10s. as abovesaid.

Fractions are thus fet down and read, viz. \(\frac{1}{4}\), one For \(\frac{2}{2}\): one Half: \(\frac{1}{3}\), one Third; \(\frac{1}{3}\), one Fifth; \(\frac{1}{6}\), one Sin \(\frac{2}{3}\), two Thirds; \(\frac{2}{3}\), two Eourths; \(\frac{2}{6}\), two Sixths; \(\frac{1}{6}\), Sevenths, \(\frac{1}{6}\).

Fractions are either proper or improper: A proper it tion hath its Numerator less than the Denominator, a five Eighths; 24 twenty-four Fifty-fixths, &c.

An improper Fraction hath its Numerator greater the Denominator: as 3, seven Thirds; 48, sony of Fifteenths, &c.

Again, Fractions are either Simple or Compound; im when Parts of an Integer or Thing hath but one No rator; and one Denominator; as \(\frac{1}{2}\) of a Pound Stering of a C. Weight, \(\frac{2}{3}\) of a Tun, \(\frac{1}{6}\) of a Gallon, &c. Compound Size a Fraction of a Fraction, as the \(\frac{1}{2}\) of a Pound Size in the pound Si

Fractions are of two Kinds, viz. Vulgar and Dais Vulgar Fractions are as declared before. Decimal Fractions are artificially expressed by setting down the Numer only, the Denominators being understood; and are alway understood; and are alway the Numerator; and therefore must be either to, or to Power of 10, as 100, 1000, 10,000, or 100,000, or

Decimal Fractions appear as whole Numbers, (and so the general so wrought) but are distinguished from them a Point or Comma prefixed, thus, 5 is read five Tenths; thirty-two Hundredths; and ,256 two hundred 56 The sandths: But of Decimal Fractions and their Use hereal

Raduction of Vulgar Fractions, is to fit or prepare to

Multiply

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Reduce

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fere 12

3. To

Multiply minators rator to

Reduce minator v Nume les 9 is les 4 is a en to fi

and 6 t 48 is c thus pro nose P

1. To reduce a mixt Number to an improper Fraction.

Rule.

Multiply the Integer by the Denominator, and take in

make 162; which plantquexathe common Prom

Reduce 12 Gallons to an improper Fraction, thus s

ci New Numerator.

Anfauer Stoor & To Quarte.

To reduce an improper Fraction to a whole or mixt Number.
Rule. Divide the Numerator by the Denominator.

Example.

duce the last Escample to a whole or mixt Number, wis.

us Remander in either. 12 (4.

Erample.

Here 12 Gallons is the whole Number, the Frac-

3. To reduce Fractions to a common Denominator.

Multiply the Numerator of each Praction into all the Deminators, except its own, and the Product will be a Nutator to that Fraction; and then do fo by the next, &c.

Example.

Reduce $\frac{2}{3}$, $\frac{3}{4}$, and $\frac{1}{6}$ of any Integer, to a common Deminator; fay, twice 4 is 8, and 6 times 8 is 48, for a Numerator to $\frac{2}{3}$; then fay, 3 times 3 is 9, and 6 is 9 is 54, for a new Numerator to $\frac{3}{4}$; lastly, fay, 5 is 4 is 20, and 3 times, 20 is 60, the Numerator to $\frac{1}{6}$: en to find the common Denominator, fay 3 times 4 is and 6 times 12 is 72, the common Denominator: So $\frac{148}{72}$ is equal to $\frac{2}{3}$, $\frac{1}{72}$, to $\frac{1}{4}$, and $\frac{6}{72}$ to $\frac{1}{6}$. Which may thus proved.

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of a Pound is 13. 48 (21 72) 162 (21) 3 ditto 16 8 & ditto

262 Common Denom 2/. C . OF 49 0 Here the feveral Numerators are added together, and make 162; which placed over the common Denomi 22 make the Improper Fraction 12 and its Va found as before directed, in the Rule for reducing ani per Fraction to a subole or mixt Number; as may be in the foregoing Page. .. rotatement well in

4. To reduce a Fraction into its lowest Terms.

bridge an improper Leading to a colider or white Nurseless Ble : Invide the Numerator by the Deportmentage. nerator by the Depondentiers

invice the

If they are even Numbers, take half of the Nume and Denominator, as long as you can; and then divide by any digit Number (i. e, 3, 4, 5, 6, 5c.) that will no Remainder in either.

Example.

Reduce 15 into its lowest Terms; say, the of 28, and the 1 of 84 is 42; and then, the 1 of 28 is is the 3 of 42 is 21: So the Fraction 1 is reduced And fince they cannot be halved any longer; for t you can halve 14, yet you cannot 21, without Remai try therefore to divide them by some other digit No and you will find, that 7 will divide both Numerato Denominator without any Remainder; then fay, the 14 twice; and the 7's in 21, three times; So the tion \$6 reduced into its lowest Terms, will be \$1, two I which is of the same Value as \$6. The Work is done

56 1 28 1

And the Proof that 3 is of the fame Value w will appear by multiplying any Integer by the Nun of each Fraction, and dividing by the Denominatoro Fraction.

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Fraction

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Integer be 1 /. Sterling, or 20 s.

Fraction \(\frac{2}{3} \)

The Fraction \(\frac{6}{4} \)

10

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84) 1120(134

84

13-4 d.

280

252

28

336(4d.

336

(c)

the it is manifest, that by working by a Fraction in its of Terms, much Time and Figures are saved. In one trainen, 20, the Integer is multiplied by 2, and the Proto divided by 3, and there remains 1, or 3 of a Shil-, for a Groat, as in the other Work.

There are other Methods of reducing a Fraction into its eff Terms; but none so ready as the foregoing, where a be used.

To reduce a Compound Fraction into a Simple one of the

Rule. Multiply the Numerators together for a New Nurator, and the Denominators together for a new Deminator.

Reduce $\frac{2}{3}$ of $\frac{3}{4}$ of $\frac{3}{6}$ of a Pound Sterling into a simple assistance. Say twice 3 is 6, and 5 times 6 is 30, the Nurator: then 3 times 4 is 12; and 6 times 12 is 72, the chominator: So $\frac{3}{72}$ of a Pound is equivalent to $\frac{2}{3}$ of $\frac{3}{6}$ of a 1. Thus proved, $\frac{5}{6}$ of a 1. is 16; 8 d. and $\frac{3}{4}$ of 15; 8 d. is 12; 6 d. and $\frac{3}{2}$ of 12; 6 d. is 8; 4 d. the asser: And multiply 20; by 30, and dividing by 72, we the same Answer, as in the following Work is Plain.

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142 The Young	Man's best Companion	The
30	Lorenza Le a A. Sterfings, or at	re the I
72)600(83.		minatio
24 Remains > 8 12 Multiply	F. 4d.	the Fran
72)288)4 d. 288 (0)	1552 1552 1552	place it of $\frac{2}{3}$, $\frac{3}{3}$,
6. To find the Valu	e of any Fraction, whether of Coil	is 5, and medion
Rule. Multiply the	Integer by the Numerator, and di and if any thing remains, multipl its of the next inferior Denominati	fa Pou
Lv. a ball and in wh	Example tant Allinair i it	s, then
of 4 of 5, answers this Again, Wi	Proof to the Compound Frame Question, and need not be repeated that is a of a Tun Weight.	When factional the wi
ile tergoto, wasto e a Sacada antanta	5 the Numerator.	dd 25 /.
The Denominator	6) 100	
	C, 16—4 remains. 4 grs. 1 C.	t is 3, a is 38.
Serling anto a fin ole ince 6 is 300 that he of	beno 1 a lo 1 lo 1 bould 1 a Lingrit 2 4 remains.	
Anfa	6) L12 T L10	lere the
to a a dias to see &	Halama Anivers as in the fall	ch dividends, the
	V 10 €	100

the Integer 20 C, is multiplied by the Numerator 5, the Product 100 divided by the Denominator 6, and the inder 4 is multiplied by the Parts of the next inferior mination, &c. and the Answer is 16 C. 2 grs. 1816.

For a Pound Weight, as in the Work.

Addition of Vulgar Fractions.

the Fractions to be added have a common Denomiator, add the Numerators together for a Numerator, bace it over the common Denominator.

Example.

1 3, 3, and \$ of a Pound Sterling together. Say, 2, 15, 5, and 4 is 9, the Numerator; which place over 5, 15, and 4 is 9, the Numerator; which place over 5, 15, and this imprometion \$\frac{2}{5}\$, is in Value 36 s. for 9 times 4 s. (the 5) 9 fa Pound) is 36 s. for if the Numerator 9 be all by the Denominator 5, I say the 5's in 9 1.1\$

and 4 remains, which is ‡ of a Pound, or 16.

the Fractions to be added have unequal Denomito, then they must be reduced to a common Denomito, by the Rule before shewn, before Addition can be to and then proceed as above.

When mixed Numbers are to be added, work with actional Parts as before, and carry the fractional Va-

the whole Numbers.

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Example.

1. 38 Anfwer.

tre 1 and 3, the Numerators, make 4; and 4 is 1; 1 is 3, and 5 makes 8: and 1 and 2 is 3, and the Anis 38.

they may be reduced to improper Fractions thus:

lere the Numerators are added, and their Total is 152; the divided by 4, the common Denominator, quotes 38 ads, the same Answer as above.

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3. When compound Fractions are to be added to Si ones, reduce the compound Fraction to a Simple on before directed; and then proceed as above.

Example.

Add $\frac{2}{8}$ and $\frac{3}{8}$ to $\frac{1}{2}$ of $\frac{2}{4}$ of a Pound; thus, once 2 and twice 4 is 8, therefore $\frac{2}{8}$ is equal to the comp Fraction: Then add, fay, 2 and 3 is 5, and 2 is 7 new Numerator, and $\frac{7}{8}$ equal in Value to 171.64, be the Answer.

Subtraction of Vulgar Fractions.

IN this Rule, the Fractions must have a common Den nator, or be reduced to one, before Deduction a made.

Example.

which may be proved by Addition: for \(\frac{1}{4}\) and \(\frac{2}{4}\)? Answer which may be proved by Addition: for \(\frac{1}{4}\) and \(\frac{2}{4}\) make Note, The Difference between the Numerators is

Difference of the Fractions.

Again, from 3 of a Pound take 3: Here the Free are to be reduced to a common Denominator: 36 is the Numerator, and 20 the second Numerator, their Differ is 16; and 48 is the common Denominator; So that or 3, in its lowest Terms, is the Difference between a Pound, and 3 of a Pound.

To Subtract a compound Fraction from a Simple on Rule. Reduce the compound Fraction to a Simple

and then work as before. Example.

From $\frac{13}{14}$ take $\frac{2}{3}$ of $\frac{8}{9}$; fay twice 8 is 1.6, and 3 time 27, therefore $\frac{16}{27}$, is equal to the compound Fraction Then $\frac{13}{4}$ and $\frac{16}{27}$ must be reduced to a common Denometor, thus; 13 times 27 is 351, the first Numerator, times 14 is 224, the second Numerator; and 14 times 378, the common Denominator. Then subtract 224 second Numerator, from 351 the first Numerator, and Remainder is 127, which place over 378 the component of thus $\frac{127}{378}$ Answer.

When a Simple Fraction is to be deducted from a cubi

Number.

Rule. Subtract the Numerator of the Fraction from Denominator, and place the Remainder over the Denom tor, and carry 1 to subtract from the whole Number, Example.

From 12' take & thus, say 5 (the Numerator) it

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Denominator 8, thus $\frac{3}{8}$; then I from 12 and there remis 11, So the Answer is, 1. 11 $\frac{3}{8}$, or 1. 11 -7 -6.

Multiplication of Vulgar Fractions.

Ultiply the Numerators into one another for the Numerator of the Product; and then do the by the Denominators, for the Denominator of the oduct.

Example.

Multiply \(\frac{3}{4} \) of a Pound, by \(\frac{5}{6} \) of ditto: fay 3 times 5 is the Numerator; and 4 times 6 is 24, the Denomination of Product, the Answer is \(\frac{1}{2}\frac{5}{4} \), or in its lowest Term \(\frac{3}{8} \).

Froduct, though in whole Numbers it augments it \(\frac{7}{2}\text{as} \) ove, \(\frac{5}{8} \) or 12 s. 6 d. is less than \(\frac{5}{6} \) or 16 s. 8 d. and also sthan the other Fraction \(\frac{3}{4} \) or \(\frac{7}{6} \) s. The reason of which have not here Room to insist on; but it is given in my submetic, in Multiplication of vulgar Fractions; to which look I refer the Reader for that, and sundry Eulargements the several Rules of the Science of Arithmetic.

Rule. Multiply the Integer by the Numerator of the action, and place the Product over the Denominator.

es being 4 of 100; and 6.801 bandredus is, is a con

This improper Fraction 16 reduced according to Rule, akes but 42 k which is less than 50; and confirms what a before afferted, viz. that Multiplication of Fractions flens the Product, &c.

Rule. Reduce the Compound Rraction to a Simple one, before taught, and work as above and traction of the desired of the desire

Multiply \(\frac{6}{3} \) of a Pound, by \(\frac{2}{3} \) of \(\frac{3}{4} \) of a Pound, Sep \(6 \)
mes \(6 \) is 36, and 8 times 12 is 36. So that the Answer is \(\frac{1}{3} \) in its lowest Terms; equal to \(7 \). \(6 \) d. \(\frac{1}{2} \) \(\frac{1}{2} \)

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Division of Vulgar Fractions.

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Rule. Multiply the Numerator of the Divisor into the Denominator of the Dividend, and the Product is the Denominator of the Quotient; and then multiply the Denominator of the Divisor into the Numerato of the Dividend, and the Product will be the Numerato of the Quotient.

Example.

Divide 15 by 3) 15 (43 Quotient.

Here 16 multiplied by 2, gives 32; and 15 by 3, gives 45: So that the Quotient is \$2, equal to \$3, as in the Work.

Again, Suppose 34 was divided by 3, the Quotient with be 32, equal to 1 Integer, or whole Thing. And so he any other Example.

Reduction of Decimal Fractions.

them. The next Step is, how to reduce a Vulgi Fraction into a Decimal: Which is no more than to anni Cyphers at Difcretion (that is 2, 3, or 4, &c.) to the Namerator, and then divide it by the Denominator.

Reduce 1 of a Pound Sterling to a Decimal:

that is, 75 Hundredths, equal to 3 qrs. of an thing, whether Money, Weight, Measure, & as being \$\frac{1}{4}\$ of 100; and so, 25 Hundredths is, in Decimal the Quarter of any thing, as being \$\frac{1}{4}\$ of 100; and so Tenths expresses the half of any thing, as being the \$\frac{1}{2}\$ of 100.

In Reduction of Decimals sometimes it happens that Cypher or Cyphers must be placed to the Lest-hand of the Decimal to supply the Desect or Want of Places in the Quotient of the Division.—In this Case always remember That so many Cyphers as you annex to the Denominate of the Vulgar Fraction, so many Places you must point of in the Quotient towards the Lest-hand; but if there is not so many Places to point off, then you must supply the Desect by placing a Cypher or Cyphers to the Lest of the Decimal.

Example 2.

Reduce 9 d. or 178 to the Decimal of a Pound Stering

40) 9,0000 (,0375 720 "

Here are but three Places in the Quotient, viz. 375; and therefore I ¥800 cannot point off 4 for the four Cy-1680 phers annexed to o; wherefore I prefix o to the Left of the Quotient 375, 1200 thus, ,0375, and then it is 370 ten 1200 thousand Parts of an Integer.

The more Cyphers you annex, the nearer you bring our Decimal to the Truth : But in most Cases, four Cyhers annexed are fufficient. But when you are to reduce i or 1 (as above) of an Integer to a Decimal, or any Number of Shillings to a Decimal of a Pound, two Cythers are sufficient. One Example more.

Bxample 3.

Reduce 3 Farthings to the Decimal of a Pound, that is, he Vulgar Fraction and, 960 Farthings being a Pound. 960) 3,000000 (,003125. The Work being performed ecording to the Division, with two Cyphers prefixed. quotes, 003125, or 3125 Ten Hundred Thousandth Parts of a Pound-By the same Method, the Vulgar Fractions of Weight, Measure, &c. are reduced to Decimals.

Example 4.

How is 12 Pounds Weight expressed in the Decimal of C. Weight Averdupois, or 112 lb. the Vulgar Fraction 12, and the Decimal, 1071 found as before, thus,

112) 12,0000 (,1071

The Remainder 48 is not 112 worth Notice, being less than the . 80, €€. 10000 Part of an Unit, or 1.

Example 5.

How is 73 Days brought to the Decimal of a Year? vulgarly thus expressed 323.

365) 73,0 (,2 Ans. 2 tenthe.

36,5 Thus proved 36,5

(0)

73

flere 16t, the Days in a Year, is divided by to, twice; the Quotients added together, and they make 73 Days.

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Valuation of Decimals.

TO find the Value of a Decimal Fraction, whether of

Rule. Multiply the Decimal given, by the Units contained in the next inferior Denomination, and point of as many Places from the Right-hand as you have in your Decimal; so those Figures towards the Lest of the Point are Integers, or whole Numbers; and those on the other Side towards the Right-hand, are Parts of 1 or Unity; that is, so many Tenths, Hundredths, Thousandths, or Ten Thousandths of one of those Integers, whether a Pound, a Shilling, or a Penny, Sc. or of a Tun, a Hundred, a Quarter or a Pound Weight, Soul And so of any other Integer, of what Kind or Quality soever,

,476 Parts of a Pound Sterling.
20 Shillings a Pound.

bonning to the same Shilling. 12 Pence one Shilling. of the present of the presen

9 s. 6 d. 960 4 Farthings & Penny. which was

Parts or $\frac{1}{4}$ of 1 d.

and round a round 20 Grit Tun.

1791.) 0000. Es (St. 1891.) 0000. Es (St. 1891.) 1891.

alimatical seine son Matten 4 grs. 1 C.

2,080

9 C. 2 grs. 2 lb. 240 Parts. - 28 lb. 1 gr. of a C.

2,240

In the Example of Money, I multiply the Fraction by 20, and point off 520 for the three Places in the Decimal &c. and the Answer is 9 s. 6 d. I nearly.

In the Example of Weight, I proceed as in that of Money (the Fraction being the fame) but with different Reform

spect to 2 grs.

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Rule

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The Young Man's best Companion. 149

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To find the Value of a Decimal in Money in a briefer Method, viz.

Rule. Always account the Double of the first Figure (to the Lest-hand) for Shillings; and if the next to it is 5, reckon 1 Shilling more; and whatever is above 5 calls every One, Ten; and the next Figure so many Ones as it contains; which Tens and Ones call Farthings; and for every 24, abate one: As admit the last Example of Money, viz. 476; the double of 4 is 8, and there being one 5 in 7, (the next Figure) I reckon 1 s. more, which makes 9 s. and there being 2 (in the 7) above 5, they are to be accounted two Tens, or 20; which with the next Figure 6 being so many Ones, making 36 Farthings; and abating 1 for 24, they give 6 d. and a Farthing more.

Addition of Decimals

Is the same in Practice as in whole Numbers; only in setting down, Care must be taken that the Decimal Parts stand respectively under like Parts; that is, Primes under Primes, Seconds under Seconds, Thirds under Thirds, &c. and the Integers stand as in whole Numbers.

36776	Example.	0211
0 8 8 8 8	15	के इंड
gers. Thirds Seconds Primes	Pa	Prime Secon Third Fourt
PS T	~	FEFF
2 4 6 ,4 2 6	,4796	,47962
7 4 ,4 2	,4 2	,064.2
9,06	,0 7 6	,006
6 5,794	,0004	,7
4 2,005	,5	9
	603	10181000

Note, There must be as many Places pointed off, as there are in that Number, which has most decimal Places.

The casting up of the foregoing Examples is the same with Addition of one Denomination, in whole Numbers: The Total of the first (supposing them Pounds Sterling) is 437 l. and ,705 Parts. The second is 11/2, and ,4750 Parts. And the third is 2 l. and 14982 Parts.

H 3

Sub-

HE Numbers must be placed as before in Adding and then proceed as in Subtraction of Numbers of Denomination.

L. pts.	7. pts.	J. pts. 1
46,5t	140,42	4762,0
9,24	91,7462	0,472
37,27	48,6738	4761,528

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Multiplication of Decimals.

HERE the placing the Numbers, and the Operation the very same as in the whole Numbers; remember only to point off, towards the Right-hand, so many Place for Decimals, as you have Decimal Places in both Mills plicand and Multiplier.

and and the	Examples.	turn to the professional assembly
1 1ad (1) 25ad 24,6 200 215	(2) 4602 ,075	(3) ,2796 ,26
1230	32214	16776 5592
61,50	345,150	7,2696
(4) ,07214 ,006	(5) ,083 ,16	(6) 4,25 1,09
,00043284	498	3825 4250
The state of the s	,01328	4 6325

of Figures, or Places to point off, such Desect is supplied with Cyphers to the Lest-hand; as in the 4th and 5th Examples, according to what was before hinted in reducing Vulgar Fraction to a Decimal.

only disoint off, and, remeind the Disuft be po

In this end hath nore than ore I point he Right-niz 818; neeger, as

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Division of Decimals

Is the same in Operation as in whole Numbers: The only difficulty is to know how many Decimal Places to oint off, towards the Liest-hand of the Quotient: to which od, remember this Rule; observe how many Decimal laces there are, in the Divisor, and in the Dividend, and in the Difference; and whatsoever it is, so many Places out be pointed off to the Right-hand of the Quotient.

Examples

tion emb

A PRINT THE COLUMN THE RESERVED
12,345670 (1,818
4. \$55667 ad 1 54312: vd lo ba
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14 54 57580
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1000
984
160
123
370

Thus much for Fractions Vulgar and Decimal; wherein have been as concise as possible, and worked with as much lainness as I could invent.

BOOK-KEEPING.

HE next Qualification to fit a Man for Buffnels, ter Arithmetic, is the Art of Book-keeping, or M chants-Accompts, after the Italian Manner, by way

Double Entry.

It is not without good Reason that most People of Bo ness and Ingenuity, are desirous to be Masters of this A for if we consider the Satisfaction that naturally ariseth for an Accompt well kept; the Pleasure that accrues to a Pe fon by feeing what he gains, by each Species of Goods deals in, and his whole Profit by a Year's Trade; a thereby also, to know the true State of his Affairs a Circumflances; fo that he may, according to Difcretion retrench or enlarge his Expences, &c. as he thall think fit.

This Art of Book-keeping, or Merchants Accompts, istal ed of by many, but truly understood but by very few. every petty School-mafter in any By-corner, will be fi to have Merchants-Accompts expressed on his Sign, as a pri cipal Article of his Ability in Teaching; though, find speaking, for want of the practical Part, he knows hard any thing of the Matter, and is consequently uncapable

teaching it.

Intructions, Notes, Rules, and Directions, for t right ordering and keeping Merchants-Accompts the excellent Order of Charge and Discharge, con monly called Debtor and Creditor.

Of the Books in Ufe.

HE Books of principal Use, are the Waste ba (by fome called the Memorial) Journal, and Links

Waste-book.

IN this Book must be daily written whatever occurs I the Way of Trade; Buying, Selling, Receiving, Delivering, Bargaining, Shipping, &c. without Omitton any one thing either bought or fold, borrowed, &c.

The Waste-book is ruled with one marginal Line, a three Lines for Pounds, Shillings, and Pence, and the Day of the he Middle nd, on C well entere

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book, b airer Har rutes; and fully fet w al Entries ny Law-I en betwe re to dif Terms, tl nuft have which in Book also Middle of on Refere

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FROM are p s called chief of called the the Number Debtor, ar this Book) and the I Books, th Journal P broad Co each Folio

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by of the Month, and Year of our Lord, is inferred in the Middle of the Page. In this Book any one may write, and, on Occasion, any thing may be blotted out, if not well entered, or any Error be made.

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NTO this Book every Article is brought out of the Wafter book, but in other Terms, in a better Stile, and in a airer Hand, without any Alteration of Cyphers or Fiutes; and every Parcel, one after another, are promiscu. fet without Intermission, to make the Book, or feveal Entries of it, of more Credit and Validity, in case of my Law-Dispute, or any other Controversy that may hapen between Merchant and Merchant. In this Book you to diftinguish the Debtor and Creditor (or in other Terms, the Debit and Credit.) And to this Book you buft have Recourse for the Particulars of an Account. which in the Leidger are entered in one Line. In this look also, the Day of the Month is usually placed in the Middle of the Page; it is ruled with double marginal Lines, on References to the Leidger; and with three Lines for 1. d. as the Waste-book.

Of the Leidger.

ROM the Journal or Day-book all Matters or Things are posted into the Leidger, which by the Spaniards is called El Libro Grande, as being the biggest Book, or chief of Accompts. The Lest-hand Side of this Book is called the Debtor, and the Right the Creditor Side; and the Numbers or Folios of each Side must be alike, as 45 Debtor, and also 45 Creditor. The Day of the Month (in this Book) is set in a narrow Column on the Lest-hand, and the Month on the Lest of that: But where I kept Books, the Number in the narrow Column referred to the lournal Page, and the Month and Day was placed in the broad Column, to the Right of that; and at the Head of each Folio is the Name of the Place of Residence, and the Year of our Lord; as thus:

But the Example of these several Books hereafter following, will make the foregoing Hints of them much more intelligible.—The following is a general Rule, upon which not of the Entries in Book keeping depend, viz.

H. 6 18 18 18

All

All !	The Young Man's best Companie Things received, or the Receiver, are De	btors to the
201	Delivered, or the Deliverer. Waste-Book Entry.	albhild at
В	London, January 1, 1762. Sought of William Wilkins, of Norton- Falgate, 120 Yards of white Sarcenet, at 2 s. 3 d. per Yard, to pay in two Months	G CTV
2	The Journal Entry of the Jame. Vrought Silk, Debtor to William Wilkins, 1.13—10 for 120 Yards of white Sarcenet, at 2 s. 3 d. per Yard, to pay in 2 Months	13 10-
li	In this Example, the Wrought Silks are Received, and therefore Debtor to William Wilkins the Deliverer.	inthe en en da , amañ pelo bravec eleck fra a
S	Again, Waste-Entry Book. January 4. old Henry Hartington 246 lb. nett of Indico at 6 s. 6 d. per lb. to pay in 3 Months	7919
3 6	Journal Entry. Menry Hartington Dr. to Indico, for 246 lb. nett, at 6s. 6d. per lb. to pay in 3 Months	7919
C	Once more Waste-Book Entry. Sought of George Goodinch, Sen. wiz. Shesh. Cheese 430 C. \frac{1}{2}, at \} 23i. 4d. per C Sutter, 50 Firkins, qt. nett \} 2800 lb. at 3d per lb to pay at 6 Months	53705-
-1	Journal Entry. undry Accounts. Dr. to Geo. Goodinch, l. 537-05-viz. Cheshire Cheese, for 430 2	on to the

Sold 7 White at 3 Indico

6 James

7 To wl per 1 8 To Inc at 7

From that an extended with a second with a s

An In belo viz.

In Caff In To per In Bro 50 J Dowla 4 d. Canarr 30 J Due Bla From these few Examples of Entry, it may be observed, that an experienced Person in Accompts, and a good Writer, may keep a Journal without a Waste-Book, or a Waste-Book without a Journal, since they both import one and the amething, though they differ a little in Words, or expression.

But however, I shall give Methods of keeping each as far a Room will give me Leave.

London, January 1st -	1762.
Inventory of all the Mo belonging to me, A. B. viz.	oney, Goods, and Debi of London, Merchan
n Cash n Tobacco 4726 lb. at 9 d.	3500,-
per lb. n Broadcloth 6 Pieces, at	177, 4, 6
50 s. per Piece Dowlas 1000 Ells, at 2s.	13,-,-
anary Wines o Pipes, at 301, per Pipe	270.
	chone Supraca NP 375 April 9. Yet

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The Young Man's Deft Companion.

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London, Feb. 2d	uil.	176	21
Sold Thomas Townsbend, viz. 246 lb. of Virginia Cut To- bacco, at 14 d. per lb.	1.	5. 4	67
60 Ells of Dowlas, at 3 s. per 1 50 of sms.	010	ib.	1)
Parket Parket William	83	07	77
Journal.	1 .+	-	E.
Thomas Townshend, Debtor to Sundries	eric a	di	di
To Tobacco, for 246 16. at 7 as 10 bond	di as	कंडा ध	50
To Dowlas, (for 460 Ells, att 69 on and	ents M	ria 3	
Wafe-Book.	2 5	07	15
Ditto 24th. Bought of Leonard Legg, four Pipes of Ca-	of ei	e die	LO
nary, at 28 l. per Pipe. To pay in 6 Months.	MA	(36)	10
Journal.	40		A
Canary Wines Debtor to Leonard Legg for	field		in
4 Pipes, at 28 Pounds per Pipe————————————————————————————————————	112	7	of of

ods leful r-Le

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The short Lines ruled against the Journal Entries are, may be, termed Posting Lines, and the Figure on Top the Lines denotes the Folio of the Leidger where a Debtor is entered; and the Figure under the Line was the Folio of the Leidger where the Credit is entered; and the other smaller Figures against the sundry ebtors, or sundry Creditors (whether Goods or Persons) we also in what Folios of the Leidger they are posted. The Accounts of Persons and Things are kept in the edger, on opposite Pages, in which those which in the single, with the word To; and those, to which they are said the Debtors, are entered on the Lest-hand se, with the word To; and those, to which they are said the Debtors, are entered on the Right-hand Page, with the word By.

For Instance, the last Journal Entry should be posted the Left-hand, or Debtor Side, of the Account of Co Wines thus:

1262

Feb. 24. To Leonard Legg.

And the same should be posted on the Right hand Creditor Side, of the Account of Leonard Legg, thus;

1762.

Feb. 24. By Canary Wines to pay in 6 Months

There are several other Books used by Merchants bei those three before mentioned; as the Cash-book, which ruled as the Leidger, and folio'd likewife, wherem all ceipts of Money are entered on the Left-hand Folio, Payments on the Right; specifying in every Entry the of the Month (the Year being fet on the Top) for w and for whose Accompt the Money was received, or pa and the Total Debit or Credit of each Side is to be po into the Leidger to the Accompt of Cash therein, in Line of either Side, wise to or by fundry Accompts, a Cash-book, Folio, &c. which is to be done once a Mo or at Differetion; and the Particulars of each Side, An by Article, are to be posted into the Leidger to the pri Accompts unto which they belong; with References in Cash-book to the several Folio's in the Leidger; and the Balance over Leaf into the Cash-book; by which may know at any time what Cash you have, or ough have by you.

Another Book, is a Book of Charges of Merchant wherein is to be entered the Custom and petty Charge any Goods shipped; as Porterage, Wharfage, Wareh room, &c. which once a Month is transferred into Cash book on the Credit Side, making Reference to Book of Charges of Merchandize; and likewife the in the Debtor Side of the fame Accompt in the Leide

the Amount thereof.

The next Book I shall name, is the Invoice book Book of Factories: In this Book is to be copiedall in of Goods thipped, either for Accompts proper or part and also of Goods received from Abroad, which m ways be entered on the Left fide, leaving the Right Blank; and on the Advice of the Disposal of Goods

road, an road, en w may The next nge acce d, they f The next othly Cl

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t paid it (i Secondly, A n Accomp Ibirdly, G ods Dr. to Fourthly, C . Cash Dr.

liftbly, G the Seller Sixtbly, G ty that bou by the Pa mad, and also on the Sale of Goods received from mad, enter them on the Blank of Right-fide; so at first w may be seen how the Accompt stands, &c.

The next is a Bill-book, wherein are entered Bills of Exinge accepted, and when they become due; and when

they should be made to in the Margin.

The next is a Book of Houshold Expences, for the othly Charge spent in House-keeping; likewise Appa-House-rent, Servants Wages, and Pocket Expences; this may be monthly summed up, and carried to the dit of Cash.

Besides the above-mentioned, there must be a Book to wall Letters sent Abroad, or beyond the Seas; wherein Name of the Person or Persons to whom the Letter is t, must be written pretty sull, for the readier finding the

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The next (and what is very necessary) a Receipt-book, erein are given Receipts for Money paid, and expressed whose Accompt or Use, or for what it is received; to ith the receiving Person must set his Name for himself, some other, with the Year and Day of the Month on the

Lafily, a Note or Memorandum-book, to minute down him that occur, for the better Help of Memory; and is great Use where there is a Multiplicity of Buliness.

Having given an Account of the feveral Books and their to the next Thing necessary will be, to give some few les of Aid, to enable the Book-keeper to make proper tries; and to distinguish the several Debtors and Creditation.

trift, For Money received, make Cash Dr. to the Party traid it (if for his own Accompt) and the Party Cr. Swendly, Money paid, make the Receiver Dr. (if for his

Accompt) and Cash Cr.

Thirdly, Goods bought for ready Money, make the

fourthly, Goods fold for ready Money just the contrary,

Cash Dr. and the Goods Cr.

the Seller of them, and the Seller Cr. by the Goods. Sixthly, Goods fold for Time, just the contrary, i.e. the ty that bought them is Dr. to the Goods, and the Goods

by the Party.

Seventbly,

Seventbly, Goods bought, part for ready Money, and rest for Time: First, make the Goods Dr. to the Party Dr. to Call for the Whole: Secondly make the Party Dr. to Call

the Money paid him in part of those Goods.

Eightly, Goods fold, part for ready Money, and the for Time: First, make the Party Dr. to the Goods for whole. Secondly, Cash Dr. to the Party received of in part of those Goods.——Or either of these two Rules may be made Dr. to Sundries; as Goods boug Dr. to the selling Man for so much as is left unpaid, and Cash for so much paid in ready Money: And so on the strary for Goods sold.

Ninthly, When you pay Money before it is due, are to have Discount allowed you, make the Person to Cash for so much as you pay him, and to Profit Loss for the Discount; or make the receiving Man Dr

Sundries as before,

Profit and Loss is Dr.

To Cash for what Money you pay and have nothing it, as Discount of Money you received before due, and Abatement by Composition, Houshold-expences, &c... Per Contra Cr.

By Cash for all you receive, and deliver nothing for as Discount for prompt Payment, any Legacy left Money received with an Apprentice, and by the Property particular Commodity you deal in, by Ships in C pany, by Voyages, &c.

To balance or clear an Accompt when full written

If RST, if the Dr. Side be more than the Crew make the Old Accompt Cr. by the New; and the contrary, make the new Accompt Dr. to the But if the Dr. Side be less than the Credit, then make Old Accompt Dr. to the New, and the New Accompt by the Old, for such a Rest or Sum as you shall find a Accompt.

2. An Accompt of Company, wherein you have planer received of another than his Stock; then add as non the Debit Side as you find on the Credit Side; to the that, in the New Accompt, you may have so much I as you put in, and so much Credit as you have received.

3. In Accompts of Merchandize, you must enter Gain, or Loss, before you make the Old Accompt Cr.

Goods of 4. In the double Coins on receive Factors compts be and Colum Forem Sum or a

New.

ceeds the compt to the Cr. I

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woid I inpts; but compt of each on a fe, because in the Constituted, toompt, we you have a Accompt The Rules of Even balance Dadly, Cast at Kind

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tols to the thir, Ever your Crs them sever

New, and the New Dr. to the Old, for the Remainder Goods unfold.

In the Foreign Accompts, which you are to keep with double Column, for the Dollars, Crowns, or other Fogn Coins, as well as their Value in 1. 1. d. which have a received or paid by Bills of Exchange for Goods fold Factors or Correspondents, or bought by them for the compts before; here you must first balance the fald ind Column of Dollars, Crowns, &c.

Sum or add up the Dr. and Cr. Sides, and fee the Diffence, which place to its opposite: As admit the Cr. Side meds the Dr. then you are to write the Line in the Old compt to balance on the Dr. Side, to answer the Line

the Cr. Side of the New Accompt."

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the State of your Affairs and Circumstances.

TOU must make an Accompt of Balance on the next void Leaf or Folio of your Leidger to your other Accepts; but after so done, do not venture to draw out the compt of Balance in the said Folio, till you have made east on a Sheet of paper, ruled and titled for that Purse, because of Mistakes or Errors that may occur or hapon the Course of balancing your Leidger; which are to restlifted, and will cause Erasements or Alterations in that compt, which ought to be very fair and exact; and asyou have made it to bear in the said Sheet, copy fair the Accompt of Balance in the Leidger.

The Rules for balancing are thefe, wire for soil . 11

A, Even your Account of Cash, and bear the Nett Rest

th, Cast up all your Goods bought, and those sold, of at Kind soever, in each Accompt of Goods; and see ther all Goods bought, be sold or not; and if any remunsold, value them as they cost you, or according to present Market Price, ready Money; and bear the Nett to balance Dr.

the See what your Goods or Wares feverally coft, and how much they were fold for, and bear the Nett Gain to the Accompt of Profit and Loss.

your Crs. in order as they lie, and bear the Nett Rest them severally to balance.

wherein is either Gain or Loss, and bear the Nett Gain Loss to the Accompt of Profit and Loss; and the Good fold to Balance.

6thly, Even the Accompt of Profit and Loss, and the Nett Rest to Stock or Capital, as an Advance to

Stock or Capital.

7thly, Even your Stock, and bear the Nett Reft to lance Cr.

Then cast up the Dr. and Cr. Sides of your Balance; if they come out both alike, then are your Accompt kept; otherwise you must find out your Error by pict over your Books again, to see whether you have enterery Dr. and Cr. in the Leidger as you ought.

Note, By pricking over the Book is meant, an examinary Article of the Journal, against the Leidger, and using it thus, - or thus +; and upon the second Examination thus +; or any

Mark.

Note also, In all Accompts of Goods, you must keep a humn in the Middle of the Louf, of sach Side, for No

Weight, and Medfure.

Though all that hath been faid in relation to he keeping, and the feveral Rilles thereinto belonging, feem a little abstruce to the altogether Unicased the yet there is no such mighty Difficulty to instruct the they may imagine: For these following Hints may make thath been already said, intelligible to an ordinary pacity.

tioned, win That all Things received, or the Received Debtor to all Things delivered, or the Deliverer; for

Rule holds good in all Cafes.

adly, When the Dr. (whether Person or Goods) is known the Cr. is easily understood, without mentioning it: A be Dr. to B, then B is Cr. by A, for what Sum it be: Also, if Goods be Dr. to C, then C is Cr. by Goods, for the Sum they amount to mention, because that most Authors (if not all) have met with on the Subject of Book-keeping, for great many Words, which I think the ging their is I err) might be saved, in declaring the Creditor, as

hewing 1 efaid, dy, This firft being the fecon ubly, Ariel left-hand muft alw Leidger then alw Gid Sum, and so it ying it to ned by the ompt mus Sum that luch more d Room damentals Inftruction he next N

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And Sceived S. Anthony ods Nine S.

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The Young Man's best Companion. hewing the Debtor, when it may be understood, as the This Art of Italian Book keeping, is called Bookby Double Entry, because there must be two Entries; fift being a Charging of a Person, Money, or Goods, the fecond a discharging of a Person, Money, or Goods. uly, frielly note, That if the first Entry be on the Dr. eft hand Side of your Leidger, the next or second Enmust always be made on the Right of Credit Side of Leidger; for whenever one Person or Thing is charthen always another Person or Thing is discharged for aid Sum, let it be what it will. nd fo it is in balancing or evening an Accompt, and ying it to another Folio; for if the old Accompt be ed by the Balance on the Credit Side, then the new ompt must be debited or charged on the Debit-side, for Sum that balanced the old Accompt. such more might be faid on this Art of Book-keeping, if Room; but I have plainly spoke to the principal amentals thereof, which I hope may be sufficient for Infruction and Improvement of any intelligent Reader. he next Matter I shall go upon, is to shew, or give Exs of various Kinds of Receipts, and promissory Notes : Bills of Parcels in different Trades; likewife Bills of debts, Bills of Exchange, with Remarks on them; some other Precedents of Writings in Trade and Merle Affairs. And first of Receipts of different Forms. Eceived September 23, 1762, of Mr. Antbony Archer, the Sum of Six nds Nine Shillings; I say received for Mafter Brian Barry, per me Caleb Catchmoney. London, September 23, 1762. Eceived of Mr. Kendrick Keeptouch, Ten Pounds Eleven Shillings and ence, in full Payment, per me

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the Sum received must always be expressed in Words togth, and not in Figures, in the Body of the Receipt; it may and ought to be expressed in Figures behind a tas in the two foregoing Examples) or else between

The Young Man's best Companion. 164 two Lines on the Left hand of the Name at the Ran the Receipt (as is shown in the Promifory Notes in p. as well as in the Body of the Receipt. When a Receipt is given in a Book, there is no 0 to mention the Man's Name of whom you recen Money; because that is implied, he being the Owner of Sixty I A Receipt in Part of Goods fold. hipful Co Pounds in Part of Indice fold him the 22d Instant, per me, Lawrence Lovemoney Received th 101 . A Receipt given in a Receipt Book. D Eceived the 26th of September 1762, Tax Five the Sum of Forty five Pounds, by ounds, in the Order, and for the Accompt of George r half, a } Greedy, Elq; per A; I fay Timothy Trufty ence Letla Eceived the 27th of September 1762, of Mr. Daniel Davenport and Company, One hundred Pounds, on Account ceived of of Self and Partner, per 25th Da Tames Tenks. R Eceived the 28th of September 1762, s for a Q ar laft, f of Mr. Peter Punctual, Fifty-five per 55-1 Pounds Sixteen Shillings and Nine Pence, in Part for Tobacco fold him the 24th of Eceived 1 August lait, per Peter Bif Fabian Funk. hillings, i The Eceived the 20th of September 1762, s, due th of the Honourable East India Comin Shuffle, pany, Three hundred and fifteen Pounds 315-1 Ten Shillings, per Order, and for the Account of Peter Pepper, per Receipt. Stepben Storax. D Eceived October 2, 1762, of the Governor and Company of the Bank of England, One thousand fix hundred Pounds or Pieces Ten Shillings, for Self and Company, per

Leonard Longpurfe.

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mber 30,

intents of

The Young Man's best Companion. Reived the 5th of October, 1762, of the Worshipful Company of Gro-Fort-nine Pounds, Fifteen Shillings, Payment for my Father Peter b per me Peter Plumb, junior. Eceived the 6th of October, 1762, of the Right Honourable Sir Samuel Bart. Lord Mayor of London, the of Sixty Pounds, for the Use of the hinful Company of Haberdafters, per Caleb Caneful, Clerk. A Rent Gatherer's Receipt. Reived the 24th of October, 1762, of Mr. Aaron Arable, in Money en Pounds, and allowed him for Tax Five Pounds, and for Repairs ounds, in all twenty-five Pounds, in half, a Year's Rent due at Michaelif: I fay received for the Use of 2000 ence Letland, Efg; by Virtue of his of Attorney, per Robert Rentroll. keived of Mr. Timothy Tenant, this 7 1 o' nimor? on Demand 25th Day of October, 1762, Six for a Quarter's Rent, due at Mimilast, for my Master Lancelot Letper Francis Paithful. ceived August 24, 1762, of Mr. Pater Bishop, Twenty-nine Pounds Promise to m illings, in Part of a Bill of Sixty s, due the 3d of Xber next, to Mr. in Sbuffle, per Francis Fidell. Rucipt, on the Back of a Bill of Exchange mir 30, 1762, received the full ments of the within mentioned be-WPieces of Eight, per Nathan Needy. Pro

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Promifory Notes.

Pounds on the 20th of this Instant September; W my Hand this 15th of September, 1762.

2. 60-00-06

Daniel Dile

to hits out begien

Odober 18th, 1762.

to Right Hengurable Sir . Santa

Promise to pay to the Honograble the Directors of South Sea Company, or Bearer, on Demand, four dred fifty Pounds, for my Father, James Jones,

1. 450

2416 Gaeber, 1762.

Promise to pay unto the Governor and Company of Bank of England, or order, on Demand, Two fand Pounds,

Nabum Nether

1. 2000

Qaber 24th, 1762.

I Promise to pay to Miles Man and Company, or I on Demand, Seven hundred fifty-fix Pounds ten lings and Nine-pence, for my Master, Robert Regal Lewis I

1. 756-10-09

Promise to pay to the Honourable East-line Coner Bearer, upon Demand, Five hundred Found

Henry Hudfon,

Martin Ma

1. 500

I Promise to pay to Mr. Christopher Cass, or Olde, Months after Date, Ave Pounds for Value and Winels my Hand this 20th Day of Ottoben, 1762.

5-00-00

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A Note given by Two.

7 E, or either of us, promise to pay to Mr. Marthew Mistruft, or his Order, Six Pounds Sterling, on Defor Value received : Witness our Hands this 27th eptember, 1762. Nathan Needy .

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CITO 62010 itness Nicholas Notice.

A Bill of Dobt.

Entrandum, That I William Want, of London, Weaver, do owe, and am indebted unto Mr. Timethy of Westminfler, Watchmaker, the Sum of Twenty-Pounds fix Smillings of lawful Money of Great Britain; Sum I promise to pay to the faid Timothy Trust, his utors, Administrators, or Asigns, on or before the roth of December next enfuing: Witness my Hand this 22d of October, 1762. itness Titus Teftis.

Bill of Parcels.

susual, when Goods are sold, for the Seller to deliver the Buyer, with the Goods, a Bill of Parcels, which lote of their Conten's and Prices, with a Total of their cast up, &c. -- These Bills ought to be handwrit, and in a methodical Order, according to the d customary Way of each particular Trade. hall therefore thew the Forms of Bills of Parcels in

Trades and Professions, with the shortest Methods of g up the feveral Articles in each Bill.

A Mercer's Bill.

London, Saprember 26, 1762. oght of Abel Atlai, and Ben. Burdett, viz. of fprigg'd Tabby, at be. 3d. per Yd. of Farringdon, at 6s. 8d per Yd. of Mohair, at 4s. 2d. per Xd. of Lutestring, at 30. 4d. per Yo

times the Money is paid prefently, then the Reu made as follows 4

168	The You	ng Man's	best Com	panion
- Receis	red the afi	h of Septem	han 1 m62	Cint
Seven Si	illings an	d Right ne	027, 1702	Sixteen Pou
my Mari	or Abal A	d Eight-per	ice, in ful	of this Bill
The second second	STREET, ALL M. M. M. A. L. C. C. C. C.	A CANCELLINE CONTRACTOR	COLUMN TO THE RESIDENCE OF THE PERSON OF THE	THE RESIDENCE THE PROPERTY OF
dit z tih	i ebrinke	Woollen-a	La Lasa A	rancis Fairf
	7.	Jan Cassan	raper 3 B	tumber,
DOM:	C D	don, Septemi	er zath, i	702.
	VIZ.	n Broadcloth		
7 Yards	of fine Spe	anish Black,	at	18-14
5 Yds 1	of ditto, a	t	*2011031	12- 4 ditt
6 Yds 3	of fine mi	x'd Cloth.	at de	- 15- odin
16 Yds 3	of Frize.	x'd Cloth,	. I ser	2- 6 die
A Yds o	f Drapide	berry, at	100 100	2 1 2 1 c die
c Yds 7	of Superfi	ne Spanish	Cloth at	18-10 die
britans	Yni Greet	wind Money	at love of la	and the Sin
ref. his	Aratin T	Linen Dra	per's Bill.	nong I musi
the roth	proise ros	eptember 26	th, 1762.	minute amin
		of Marmaa		
		t 1s. 4d. pe		
14 Ells o	f Lockram	, at 1s. 3d.	per EH.	F sunTim
22 Ells 4	of Holland	1, at 35. 3d.	per Ell.	4000
Piece	of Cambri	c, at Igh.	Goodsan	nedw lede
Sr Yards	F of Diap	erat at 11.01	odeper Yd	the Buver.
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The fe	veral Artic	les of the	Bille are	purpofely on
being cal	up, for th	he Exercise	of the Re	ader in the
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	hatfoever.	My market and mides	1 1 1 1 1 1 1 1 1 1	- Street - You
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We'll	take the laf	t Article of	the Woo	Hen-draper's
		0 18s. 10d.		
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1, 1762, viz.

Pr. of Thread Hose, at-

Dried Salmon, at-

lication of Money; and the Product by 5 is 1. 4-14-2: hen for the 3 of a Yard, I multiply the Price of the Inen, viz. 18 1. Yo'd. by the Numerator of the Fraction, 7, and divide by the Denominator 8, and the Quotient 161. 3 , agreeable with the Rule spoken to in the offrine of Fractions. Which 16 s. 5 d. 3 added to Product of 18s. 10d. multiplied by 5, gives 1, 5-0-73, as in the Operation above. To Russia Hides, at His a Bill silves or

Bought of Robert Raifin, and Peter Plumb, OBober the

ugar 2 Hhds qts.—17—2—17 at 1—10—6 per 6.

obacco 1 Hhd. 4-0-12 at 4-19-4 obacco 1 Hhd .obacco 1 Hhd. 4-0-12 at 4-19-4 ide 1 Barrel 1 -0-15 at 2-16-4 ide 1-0-15

epper r Bag--1-3-19 at 3-12-4 i Donen of Ciro Place inflone _____

A Hofier's Bill 10 and 190

Bought of Silvefter Slipftocking, Ogober 5th, 1762, viz. Pair of Womens mixt Worsted Hose, at-Pr. of Womens Silk Hole, at Pr. of Mens Woollen ditto, at-8 Pr. of Womens ditto, at-Yds. of Flannel, at-1 s. 11d.

A Fishmonger's Bill.

Bought of Leonard Ling, 6th of October 1762. C. of Haberdine, at 7 1 of king, at 8-12-0 1 C. ½ of Stock fish, at 10 2 20 2 -4-10-6 Barrels 1 of white Herrings _____ 3-10-Barrel of red Herrings 10 10 2 27 12 6

Note, Of Haberdine or Ling, 124 is a Hundred: Of wifish and Herrings, 120 to the Hundred, 1200 to a Thou-

	(2018) - [[하시는 경기 (2017) 10 ] - [[하시는 시스트 (2017) 10 ] - [[included]] - [[include	
- d sd 3	A Leather feller's Bill Could be	2
Bough	t of Henry Hide, the 17th of Odober, 1762,	If the
Ouprient	e oil'd Lamb Skins, at 1-3 2 per Skin	etcipt ci
12 Kapt	of Croat Skins, at	*****
127 Allo	m'd Sheep Skins, at-	full of t
19 Calv	e Skins, at	lafter Da
05 011 0	Buck Okins, at	
60 Biet	a Hides, at 12-9	1
Note.	50 Goat Skins make a Kipp; and other Skins	
Five core	to the Hundred A Dicker is 10 Hides or Shi	762
and 30 D	ickers a Laft.	
	A Pewterer's Bill. alones & and	areb 16
Rought	of Andrew Antimony, Odober the 7th, 1762,	ril 14
Dought	or mark a manney, october the playing or,	to 16
9 Hard I	Metal Diffes wt. 42 at 14 d. per 16 - 02 9	of 16
1 Dozen	of ditto Plates 0 17	to 25
	h of ditto	If Part o
Tankan	fought of Salvefler Supplicating, Office to	Received
18 Beff S	noons	velve Pou
· 2 Hatti	Vietal Porringers	ment, fe
I Salt of	ditto of Womens dutto, at Caftors of Womens dutto, at caftors	1
10 136 1	Caltors of Flannel, at-	
14 305 A.A.	of Thread Hole, at	50
	155 Carmon B. A. C. Const. C. T. T.	. N
· Daving	Bills on Book Debts.	11 24
.51	A Woollen Draper's Bill 1 to inguid	7 16
1759	Mr. Francis Frites, Dibradall to 3	19
April 20	To 16 Yds 1 of Black Cloth, 2013 10 10	0 25
5	at cantrol study 18 4 4914	
ditto 24	To 4 Yds & of Drap de berryot to latte	an is the
May 4	To 35 Yds of mixt Gray Cloth	lid to igo
angreas D	att As a state of the state of	Red
27	To 12 Yds of fine ditto, at 17 27 25 25 25 25 25 25 25 25 25 25 25 25 25	(28.7)
June 12	Cloth, at 17 3	Wielug !
		100 . 1

The Young Man's best Companion. If the Gentleman pays the whole Bill, then make the eccipt thus:

Received the 19th of Octob. 1762, of Mr. mis Frize, the Sum of Fifty four Pounds, &c. . 1. full of this Bill and of all Accompts, for my (54, &c. later David Draper; per Mich. Meafurewell.

#### A Mercer's Bills

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Madam Dinab Dilatory, Dr. to Bryan Brocade, To at Rolls of Lobacca, qt. .xiv Yds. arth 16 To 16 1 of flower'd Sattin, at 14 ril 14 To 14 of Venetian Silk, at-11 to 16 To 99 of Mohair, at-6 16 To 14 1 of flower'd Damafk, at 9 To 5 8 of Gone Velvet, at-21 10 25 To 4 of Lutestring, at 4 7 Received of Madam Dinub Dilatory, elve Pounds Ten Shillings, in Part of 7. 1. d. ment, for my Maker Bryan Brecade; 12 10 00 rad Hanry Hunter. ....

#### A Corn chandler's Bill.

Mr. Robert Racer, Dr. to Lional Livery. . bTotas Thousand Brick 1 24 To 5 Quarters of Oats, at-2 3 per Bufh. To o Buthels of Beans, at-4 10 To 7 Bashels of Bran, at 100 To 19 Bushels of Oats, at 11 11 02 25 To 16 Bushels of Beans, ate-3 11 To 90 Days my Man, at 21. 6 .. To 90 Jays another Bricking at & CA

To go Days for 2 Labourers, a col. a base 1000 plain Tiles is Load; and 2; hope or be bine 1 C. A Brick must be 9 India to . with

Bricks are of three Sorts, Place Pricks, Ra Liev Stock Brickt . . . . . 1

Here will be convenient to give a general Ruleia g ap any Thing fold by the Thousand; as in

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Multiply the Pri three ] Figure e by 20 arated to erior De tes towa ft are P by 4; a d and t dif the H Farthin tras befo the Rul bove dire

176	2 Mr. Francis Fume, Dr. to Richard Raife
May	To I Had of Tobacco, tothe nettering
1.	569 lb. at
	To I Box, qt. 75 16, netty at the
fune i	To 5 Bags of old Spanish, qt. nett,
fuly 12	To 1 Hhd. qt. 334 Grofs, Tare 42,
Brocede	Inett, 293 Walsti da 15
	To z Rolls of Tobacco, qt. 94/b. at 95
	Y. V.
by man	A Stationer's Bib. 01.0T dia
762	Mr. Sifcera Scribler, Dr. to Phinens Fool
and the second	16 To co of Mohair, at
	Reams mad b'rowof lo in of. di
ulv 12	To 57 of Demy Paper, lat To 19 pu
tto 31	To 195 of 2d Foolicap, lat - 016 3
ugult 24	To 375 of 2d Dembas 199 8 149
ber 6	To 95 French Royal, at 10 201600
ber \ 26	To 26 Rolls of Parchment, ar 15 91
Note.	A Roll of Parchment 11500 Shins a Read
dber 20	Quires; and a Bale of Reper 10 Reams.
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Carried Manager

March 27 To 25 Thousand Bricks, 16s. per M.

To 25 Thousand Blain Tiles, at 20s 6d per April 1 To 28 C. of Lime, at 12s. per C. di ditto 9 To 20 Load of Sand, at 3s. 6d. per C.

May 20 To 140 Ridge Tiles, at 8s. 6d. per C.

June. 24 To 90 Days Work myself, at 3s Ter Day
To 90 Days my Man, at 2s. 6d.
To 90 Days another Bricklayer, at 2s. 6d.
To 90 Days for 2 Labourers, at 20d. 2 Days

Note, 1000 plain Tiles is 1 Load; and 25 Bags or Be of Lime 1 C. A Brick must be 9 Inches long, and 4 I broad. Bricks are of three Sorts, Plaice Bricks, Red Gray Stock Bricks.

Here it will be convenient to give a general Rule for casting up any Thing fold by the Thousand; as Br

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Pocce!

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les, Clinkards, or Flanders paving Bricks, and several les Things mentioned in the Book of Rates, viz. Barrel cops, Goose Quils, Oranges and Lemons, Squirrel ins, Billets, &c.

### And the eafy Rule is this, viz.

Multiply the given Number by the Shillings in the Price, the Price be at fo many Shillings per M) and always cut three Figures or Places towards the Right-hand; and Figures toward the Left-hand are Shillings, which diby 20, to bring them into Pounds: and those Figures arated toward the Right-hand, multiply by 12, the next rior Denomination; and still cut off, or separate three as toward the Right-hand, and the Figures toward the fare Pence, and the three last Figures cut off, multiby 4; and still separate three Places toward the Rightand the Figures toward the Left are Farthings. if the Price be Shillings and Pence, or Shillings, Pence, farthings per Thousand, then multiply by the Shilhas before, and take Parts for the Pence and Farthings, the Rule of Pradice; add these together and proceed bove directed. proceed as in the last Rule."

### Example 1.

2465		12. 629	IL.		0171 [7]	
172550 24650	10 .5		11 00	Anh s	21	-
419050	Anjave	r 419s	. 0½d.	or 20	. 191. 0	d.
0 600					0.00	
2/400					477	

When Things are fold by the Hundred, as Dath Bugliff Pantiles; then follow this Rule, wir.

Multiply the given Quantity by the Shillings in the Prond take Parts for the Pence and Fanthings (if any) a fore; then from the Right-hand of the Sum cut of Places, and proceed as in the last Rule.

Example 1.

1726 Pantiles, at 7s. per C.

120|82

12

Answer 120s. 9d. \(\frac{3}{4}\), or 6 \(\hat{L}\) cos. 9d. \(\frac{1}{4}\).

3|36 J

Francis

T Sight Order, Christopher from

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Example 3.

2964 Stock Bricks, at 21. 6 d. per C.

5928 Anfw. 74s. 1d. 10 f. or 3l. 14s. 1d. 1482

74 10 12

Of Bills of Exchange

180

ILLS of Exchange are either Inland, or Foreign: The Inland Bills are drawn by one Trader in one yer Town, upon another of another City or Town in ame Kingdom; as London upon Briffel, or Exeter upon in, St. and these chiefly concern our Shop-keepers, wholesale Traders either of Town or Country; and foreign more immediately concern the Merchants. Will of Exchange, if handsomely drawn, must be written fair Hand, on a long Piece of Paper, about three to broad, and writ in Form after the following Precent

## A Bill payable at Sight.

T Sight hereof, pay to Mr. Gragony Greedy, or his Order, the Sum of Fifty Pounds, for Value received Christopher Cash; and place it to Accompt, as per Adtom

Mr. Peter Punctual,

m, A Bill at Sight is payable three Days after the Ac-

I 4

Exon,

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1) 21

t of

Exon, November 14, 1762 CEVEN Days after Sight hereof, pay to Mr. Nath Needy, or his Order, twenty-four Pounds ten Shilling for the Value received here of Mr. Timothy Transfer, a place it to Accompt, as per Advice from To Mr. Simon Certain, Your Friend and Servan

Haberdasher, in Milkstreet, London.

If Mr. Needy fends his Servant, Andrew Benfon, to ceive the Money; after he hath writ his Name on the Ba of the Bill, (which is his Order) the Servant mult with Receipt to his Master's Name, thus:

R Eceived November 16, 1762, the full Contents of within mentioned Bill, being Twenty-four Pounds, Shillings.

Witness Andrew Benson. 10 2.1.1

Nathan Nu

Ebenezer Rem

Michael Moneym

The Island Hill are diana b A Foreign Bill of Exchange.

London, 6th October, 1762, for 460 Crowns 56 d. 3 Sterling per Crown.

T Usance pay this my first Bill of Exchange (m) cond or third not being paid) unto Mr. Henry Ver or Order, Four hundred and Sixty Crowns, at 50 d. Crown, for the Value received of Mr. Samuel Iben and pass it to Accompt, as per Advice from, Sir, Your humble Servan To Mr. Will. Walker.

Another. London, 17th Odober, 1762, for 480 Dollar 55 d. 1 per Dollar.

A T three Usance pay this my first of Exchange, Mr. William Wealthy, or Order, Four hundred Eighty Dollars, at 35 d. & Sterling per Dollar, for the lue received of himself, and place it to Accompt, a Advice from,

To Meffrs. Daniel and David Bernardifton, davage in it is Mark Mere Merchants in Aleppo.

Merchant in Paris.

Your humble Serva

Note, ed is Ol Portug Months,

Brift

A T de ieces of iece of E of it to 4 Mr. Si Mercha

THE I the bereof. 2. The

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T freque a Bill, is first ma he write rder, (as ebted to,

d then he elivers it t ay be, th

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Note, Usance, between England, and France, on Hollad is one Calendar Month; between England, and Spain of Pertugal, two Months, between England and Italy three Months, &c.

Once more : i te mel tobal al

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A. Merc

Briffel, 8th October, 1762, for 600 Pieces of Eight, at

A T double Usance pay this my first Bill of Exchange unto Mr. Lawrence de Luz, or his Order, six hundred
seces of Eight Mexico, at fifty-three Pence & Sterling per
sece of Eight, for Value received of Gomez Henriques, and
sist to Accompt, as per Advice from yours, day
Mr. Simon Surepay,
Merchant in Leghorn.

Notes on Bills of Exchange: or bonus de

THE Acceptor of any Bill is become absolute Debtor to the Person to whom the Bill is payable for the Centents anos.

2. The Person to whom the Pill is payable, must demand in Money the very Day it becomes due, and if the Acceptor abefore it becomes due, it must be demanded of the Executor Administrator.

3. The Drawer of any Bill must always give his Correudent a Letter of Advice, that he hath drawn such a Bill him for such a Sum, &c.

4. None may pay a Bill without fuch a Letter of Advice.

5. In England a Bill is due the third Day after the Ex-

## Of Indorsing.

T frequently happens, that between the Acceptance of a Bill, and the Time of Payment, the Party to whom is first made payable, hath occasion to pay it away; if the writes his Name on the Back of the Bill, which is his inder, (as said before) and gives it to the Person he is insected to, and then he is impowered to receive the Money: and it may be, the second Person also wants to pay if away; then he writes his Name likewise under the other, and divers it to a third Person to receive the Money: And it may be, the third does the same, and delivers it to a fourth I 5

## 178 The Young Man's best Companion.

Person, &c. All that do so, are Endorsers: and he the last bath the Bill, if the Acceptor will not pay it, may so lim, or the Indersets, or Drawer, or any of them, for the Money.

An Indorsement is generally in these Words, viz. Pathe Contents of the within mentioned Bill to Henry Hasty.

But generally the Name only is accounted fufficient.

# Of Protesting.

the Bill must go to a Public Notary (not a common Seriounar) whose Business it is; and he goes with you to the Acceptor's House, and demands Payment, &c. And then he draws up a Protest according to Law; which is to be returned to the Drawer within the Time limited, &c.

once & Sterling per

It is needless to give here the Form of a Protest, because no Man can do it of himself.

## A Bill of Debt.

Lackcash, of Southwark, Vintrier, do own and as indebted unto Charles Creditman, of the same Place, Salter the Sum of One hundred and Fifty Pounds of lawful Money Great Britain; which said Sum I promise to pay unto the said Charles Creditman, his Executors, Administrators, or Assessment or before the 24th of December next ensuing the Dat Bereof. Witness my Hand and Seal this 6th Day of Oct. 1762 Sealed and delivered in the Presence of Lawrence Lackcash

## A Bill for Money borrowed.

Received and borrowed of Oliver Overcast, of London Merchant, Fifty Pounds, which I do bereby promise pay on Demand. Witness my Hand this 6sh Day of 08 1762.

A legillaria sons sies same, and deliverside to a fourth

7. 50 reads and reading a feet of a mark of any Peter Peous

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The Form of a Bill of Lading.

CHipped by the Grace of God, in good Order and well conditioned, by Edward Expert of London, Merchant, in and upon the good Ship called, the (Bilbon Merchant of London whereof is Mafter under God for this present Voyage (Martin Mizen of London, Mariner) and now riding at Anchor in (the Port of London) and by God's Grace bound for (Cadiz) to fay (1 Bale Bof Stocking Baize, and I Trunk containing five hun-No. dred Pair of Silk Stockings, Contents, &c, as per In-12. voice) being mark'd and number'd as pen Margin, and are to be delivered in the like good Order at the aforehid Port of (Cadix) the Danger of the Seas only extepted, unto (Mr. Thomas Drake, Merchant, there) or to his Assigns, he or they paying Freight for the said Goods (three Pieces of Eight per C. Wt.) with Primage and Average accustomed. In Witness whereof the Master or Purser of the said Ship hath affirmed to three Bills of Lading, all of this Tenor and Date, one of which (three) Bills being accomplished, the other (two) to stand void. And so God send the good Ship to her defired Po. in Safety. Amen.

Dated in London, the 6th of Odober, 1762, Insides and Contents unknown to Martin Mizzen.

Note, The several Wards included in the Parentheses, are to be put into the several wacant Places that are in a Blank Bill of Lading.

Note also, Average is the general Allowance made to the Master of the Ship, of 1 d. or 2 d. in every Shilling Breight; Primage, a small Allowance to be distributed among the Sailors.

To Committeen at 5 2 Col Tile

730

## The Form of an Invoice.

Port-Royal in Jamaica, July 24, Anno 1762.

INVOICE of five Barrels of Indico, five Hhds of Sugar and five Hhds of Pimento, shipped on board the George of London, George Jones, Commander, for Accompt and Risque of Messers John and Thomas Fisher, of London, Merchants, being mark'd and number'd, as per Margin; Contents, Costs and Charges, as in the following Example.

I Indico r R	1000	111	
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	10	1	0
	10	1	
	10	1	
strate bary skilled of or svilen	10	1	1
756lb. nett, at 25. 2d. per lb.	81	13	-
Sugar 5	1 8	10	1
Hhds Tare	chi	1	
		1	
		11	
	3		
	1.5 7	1	
15-1-10-1-3-22	70	19	5
68-0-00-8-3-12	1		
Pimento 1	7000		
	1.	П	
th the ago Tare.	17.0		
	44	3	10
306-72 Nett 1637 at 11d. 7 p. lb.	78		야.
	1	11	
( )	1.31		3
412-82 To Cost of & Barrels and	40		
10 Hhds. 4-7-9	45		
2026-389 To Storage 1-0-0	. 5	7	9
	-		
	236	15	0
To Commission at 5 p. C.	II	10	1
	311 314 644 152 172  756lb. nett, at 2s. 2d. per lb.—  Sugar 5 Hhds Tare C. qr. lb. C. qr. lb. C. qr. lb. 11-3.27—1-2-19 Grofs 68-0-00 12-2-19—1-3-00 Tare 8-3-12 13-2-13—1-2-16 14-1-15—1-3-11 Nett 19-0-16 15-1-10—1-3-22 Pimento 5 Hhds, Tare 2026 Grofs 1b. lb. 389 Tare. 432—84 396—72 Nett 1637 at 11d. \(\frac{1}{2}\) p. lb. 410—81 376—70 Charges 412—82 To Coft of 5 Barrels and 10 Hhds. 4-7-9 2026—389 To Storage 1-0-0	311 314 644 152 172  756lb. nett, at 2s. 2d. per lb.————————————————————————————————————	311 314 644 152 172  756lb. nett, at 25. 2d. per lb.————————————————————————————————————

Errors excepted per A. B.

Port-

Ccount 1112

Ells of E d Siccess, at of Lan

Portage of Commission Storage 2

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## An Account of Sales.

Port-Royal, in Jamaica, July 24th, 1762.

Sugar

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Count of Sale of 2765 Ells of brown Ozenbrigs, 1112 Yards of blue Hartford, z Pieces of Gray b, qt. 39 Yards, 50 Pair of fine Worfted hofe, and Ells of Bag Holland, received from on-board the Ship Sciefs, Capt. Samuel Sharp, Commander, for Actof Lawrence Lucky, of London, Merchant, is Dr.

Portage of ditto—1.00—17—06 Commission of Sales—13—01—11	7.	(0) (0)	d. 4
Storage at 1 per C. 111	\$1.0	(D)	12
he Nett Product carried to the Credit	26	IC	42
your Account, bad Debts excepted-	241	6	41 ·
Per Contra Cr.	251	16	9
2765 brown Ozenbrigs, making 3456 ds \(\frac{1}{4}\) at 8d. \(\frac{1}{2}\) per Yd. fold Ambique Baker 112 Yds of blue Linen, fold at 7d. \(\frac{3}{4}\)	122	8	2,
ames Smart, for 39 Yds of Cloth, at	35	18	2
urence Monk, for 50 Pair of Hofe, at	29	1.5	.0
10d. per Pair————————————————————————————————————	19	11	. 8
3d. per Ell	54	13	9
tel to ) to content Pents ( ) see	261	16	9
excepted, July 24th, 1759, per Charles Careful.	kun	G 2	

us at the Waterside, concerning Exporting and Imting of Goods, &c. Entering them at the Custom-1/e, &c.

HEN there are Goods to export, and ready pack'd, Ge. there must be first made a Bill of Entry, (as it of the Contents, after this Form, wiz.

In

182 The Young Man's best Companion.

In the Loyal Merchant, William Worm, for Barbai

Three Cases of Haberdashery. Five Tuns of Beer, &c.

Of these Bills there must be seven, one of which me in Words at Length, and the other may be expressed gures: These are by the Clerks of the Custom-house en into several Books for that Purpose.—If some Goods Custom, and others not, then there must be made two tries; one for those that pay Custom, and another for that pay not; and likewise you must have two Cocket

A Cocket testifies the Payment of all Duties; and is on a small Piece of Parchment, in the following Word

Know ye, that Edwin Export, Merebant, for shru of Haberdufbery, and five Tons of Beer, in the L. Menchant, William Worm, for Barbadoes, had all Duties. Dated 9th November, 1762.

On the Backfide of the Cocket you must set down Marks, Numbers, and Quantity of the Goods express the Inside.—When on clean Paper you transcribe you of Entry; upon which a Shipping Bill will be made on the Back of which, signify the Marks, Numbers, and tents, as before on the Cocket; both which being the dorsed, you are to deliver them to the Searcher at the terside, who deposits them in the Office till the going of the Ship, and then they are delivered to the Capta Master of the Ship.

If you have not Judgment or Experience enough to your Goods yourself, 'tis but applying yourself to an of the Clerks in the Long-room, who make it their bu (and good Business too) to enter People's Goods; and Shilling (you giving them the Contents) they will your Bills, and pass your Entries, without giving your further Trouble, or your running any Risque of m

any false Entries, &c.

Entry Inwards.

Long-room, and you will find the Name of the and Captain, as also the Waiters that are to attend the livery of the Ship, and at what Key the Goods will be ed. The Entry inwards runs thus:

here n wards) as one mant of the Nam the Mary Custom arrant for then Go

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The Young Man's best Companion. hibs Mercury, John Keelhanl, from Antigue, 1010 25 Hhds of Sugar, Seamon's blook boy said to 6 Bags of Cotton, Steren and and altit A here must be eight of these Bills, (though but seven ards) and one of these must be in Words at length, (as sone of the feven Bills outwards) which is for the mant of Delivery; and must be figned by the Person in e Name the Goods were entered; and the Mark also Margin; which being done, and the Fee for Entry, Custom paid, you will then have from the Land-Waiters arant for the Landing and Receiving your Goods. Then Goods are to be exported by Certificate, win. Fo-Goods formerly imported; these Goods being to be Abroad, or exported to another Place or Country by a re of England within Twelve, or a Stranger within Months after Importation, entitles the Exporter to a wback of Part of the Custom paid at the Importation le faid Goods, (producing a Certificate from the Comper, that they have paid the Duties inwards.) And the enture of Custom Drawback runs thus: Debenture, a le soul - loon 9, 40 Hilfopher Commerce, Natural born, did on, &c. make an Entry with us of Two thousand Ells of broad Ger-Linen, in the Amazon, Capt. Stephen Stout, for Jaa, the Subfidy, &c. was paid inwards by, &c. as appears Consistent of the Callector Inwards: And for farither ifeflation of his just Dealing therein, he bath alfo taken before us of the fame. ultom-house London, gth November, 1762. The Oath. Comments of rat C. C. That two thousand Ells of broad Germany n, above-mentioned, was really shipped out, and back in relanded in any Port or Creek in England or Wales, last Shipped, Nov. 9, 1762. The Certificate Cocket. ondon; Know ye, that C. C. for two thousand Ells of Germany Linen, paid per, &c. the Day, &c. laft, late in, and now in the Amazon, Stephen Stout, for 1. Dated the 9th of November 1762. his Certificate Cocket is gained by applying to the Books

Importer, to know the Day, &r. when the Custom

udwas paid, and by whom; which carry to the Longinthe Cuffem-bause, and deliver it to the Comptroller's

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Clerk of the Subfidy Inward and Outward, with an Acc

of what you would export, &c.

A little before was mentioned at what Key the G should be landed, and therefore here it is proper to mm. Keys (or rather Quays) and Wharfs that Goods are us landed at; which are these, viz.

Somer's-Key, Smart's-Key, Wiggen's-Key, Bear Key, Key, Custombouse-Key, Potter's-Key, Wool-Key, Galley Brewer's-Key, Raipb's-Key, Chester's Key, Lyon's-Key, Key, Hammond's, Young's and Gaunt's-Keys, Wharfs are, Fresh Wharf and Botolph-Wharf.

Besides these, there are certain Places called Docks, ware Harbours cut into the Land, where there is no Cur but only a Flow and an Ebb, occasioned by the Rise Fall of the Tide in the River of Thames; and these are venient for the lying of Vessels, Hoys, Lighters, Ba

and Boats; and are thefe, wiz.

Billing sgate-Dock, Sabb's-Dock, Tower-Dock, St. Corine's-Dock, Wapping-Dock, Hermitage-Dock, Execu Dock, and Limebouse-Dock. And above Bridge, Quent Dock, Puddle-Dock, White-Frier's-Dock, and Scotland Took. And on Southwark or Surry Side, are Sovia Dock, Clink Dock, and Sawery's-Dock below the Bridge-and several others for private Uses—But more paricu eminent on that Side the Water, is the Bridge-yard landing sundry Sorts of Merchandizes, but chiefly from Ports of England.

Of Wharfage and Lighterage.

Harfingers have teveral Managers over them, and a Committee to redress Grievances, &c. and C of the Stations, with Lighter Managers, and have the ting of many Warehouses, (which now are very fine commodious, being rebuilt fince the sad Fire in The street) Cellars, &c. and have the Privilege of kee Lighters for the Carriage of Goods to and from Ships.

The Rates of Wharfage

Are generally computed at 12 d. per Ton, whether ward or Inward; excepting Sugars from the Wiff-le which pay 21. per Ton, 4 Hogsheads being accounted a (tho' they weigh more;) Crainage is included in the per Ton Wharfage, and for Lighterage, the Wharfahave 12 d. for 4 Hogsheads of Sugar that come

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Well Indies; and for Wine and other Goods, the Ligh-

# Husbands of Ships

WHERE several Persons are concerned in a Ship there is usually a Husband chosen by them, to take account of every Merchant's Goods, & and pay the harrage, Lightenage, Porterage, &c. and these Husbands to collect every Merchant's Proportion, when they do Owner's Freight.

# Of Mensuration of Planes and Solidsoldo HA

THE feveral Kinds of Measuring are Three, wiz. if, Lineal, by some called Running Measure, and aken by a Line, and respects Length without Breadth: Parts of which are, 12 lnches 1 Foot, 3 Feet 1 Yard, 16 Feet and an half 1 d Pole, or Pearch. All Kinds of ornamental Work, fuch as Cornice, Freeze, are measured by Running Measure. in 1992 uly, Superficial, or square Measure, is that which reets Length and Breadth; and the Parts are, ad a 144 Inches 1 Foot, 72 Inches half a Foot, 36 Inches Quarter of a Foot, 18 Inches half a Quarter of a Foot, Inches and a Quarter one Rod, 136 Feet half a Rod; of laches, or o Feet one superficial or square Yard. 149, Solid, or Cube Measure, which respects Length, tadth, and Depth, or Thickness; and the Parts are, 1728 Inches 1 Foot, 1296 Inches three Quarters of a 101, 864 Inches half a Foot, 432 Inches one Quarter of Foot, and 27 Feet 1 folid Yard.

## Superficial Measure.

144

O measure Things that have Length and Breadth, such as Board, Glass, Pavement, Wainscot, and and is to take the Dimensions of the Length and Breadth, wording to the customary Method used in each Particular; Instance Board and Glass are measured by the Foot, to Dimensions are taken in Feet and Inches, and the Contragrent in Feet.

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The Dimensions of Wainscoting, and Paving, Paing, and Painting, are taken in Feet and Inches, and Content given in Yards.

## Of the Square and Superficial Content or Area.

The squaring of any Number, is multiplying it interests, as 12 Inches multiplied by 12 Inches make 144 for Inches. The superficial Content or Area of any Thin sound sour several Ways, viz. by whole Number, Decimals, by Practice, and by cross Multiplication; each of which Methods I shall give Examples of Operation

A Square hath its Sides perpendicular and equal.

An oblong hath its Sides perpendicular, and these are opposite equal; but the adjacent Sides are uneque Boards, Wainscots, Ciclings, Windows, Doors, Co.

when any thing is to be measured, it must be confidently what Form or Fashion it is of; and then it must be no fured according to the several Rules for each Figure.

First, Is it be a Square or Oblong, then the Length Breadth must be multiplied one by the other, which g the Content in square Measure, and that Product must divided by its proper Divisor according to the Name which the Content or Area is to be given.

#### Example.

Admit a Board be an Inches broad, and a Foot of Inches long; how many foured on superficial Reet do contain trees and a second tree to be a substitute of the contain trees and trees an

deches i foot, 1206 Inches that Color of the Color of the

144) 1152 (8F

given in Feet,

Here the Length in Inches is multiplied by the Brain Inches, and the Product 1152 divided by 144, the for Inches in a Poot, quotes 8 Feet square for the Content the Board.

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### A Rule for Difpatch.

The Length of a Board, or Piece of Glass, begiven in t, and the Breadth in Inches, multiply one by the other, thout any Reduction) and divide the Product by 12, and Quotient will be the Answer in Feet, and the Remainwill be Parts of a Foot. So the foregoing Example ht have been done sooner by dividing of the Length by the Breadth, and it quotes 8 Feet for the Content, as by former Way.

Example.

Suppose a Board be 14 Feet long, and 15 Inches broad; is the Content in square Feet !

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Or concifer thus:

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1. 1 32 or E Anf. 17 So the Answer is 17 Feet and 1. And fo for any other Example of this Kind.

By Crofs Multiplication

Here 2 Inches is the 1 of 8 Foot wherefore + of 14 is taken, and added to 14, and it makes 17 Foot, and 2 equal to I.

Lufter 1 mount

dustber Example worked four different Ways. sall

a Board be 12 Feet & or 190 Inches long, and 19 Inbroad; how many fquare Feet doth it contain?

VULGARLY. .... 1 10 ..... DECIMBLEY. Inches.

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the other.	Piece of Girls and Record of Record of the Piece of the P	freadth in Letter College	Inches 7.
Rem Multiply	. 90 by 12 Inch. 1 Foo	ill be the Animalities of a Foot.	Quarters 2
	1080 (7 Inches. 1008	T. Com	3 44 12mill
Multiply b	y 4 the Quarter	s in an Inch.	0 2 3111 31 11
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.bnip	Example (fable		t if The C
By Crofs A	Aultiplication Feet. In. 12—6	By Pri	ictice.
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The four multiplying The second	the Inches togeth Work is personn	ner, and dividing	by 144, c
Practice.  Any of the	these Methods ma e arithmetical Pa y Cross-Multiplic	y be eafily unde	rstood by
In the E	xample, 1 Foot 3.	flands under 42	Foot 6;
F			23.00

hen crof l'sin 36 Inches: times 6 175, eq. If a Boa e Breadt gether,

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for equal to 1, as in the Work. in discount grive!

If a Board be wider at one End than the other, then take

Breadth in the Middle, or add the Meafure of both Ends

geher, and take the Half for the thean Breadth, which

hiply by the Lengthers to discount and the the the the state of the st

#### Example.

Suppose a Board to be 120 Inches long, and the narrow-End 10 Inches wide, the broadest End 34 Inches wide; that is its Content in superficial Feet?

34 broadest End.

Sum 44

Rooms being various in their I oding to the Hall But Length. Rooms being various in their I oding to the Rule in all Calcas wire.

Take a Line, and apply or what is 1993 &1) epoch the Room; then measure the Room; going into eith oner with the Line, till you come to the Place varied begin: Then the how many Feet and Inches 0024 contains, and set it down for the Compass or Rostly at the Height by the films Method

m. 48 4 2 | 3 | Inches that is 48 the Remainder

Having thus thewn the Methods of cashing up the first of cashing up the first of come now to Paintelland, and the first of Feet. Inches.

10 the Length.

Freadth, which will produce the Obntendas abovedath of \$\frac{6\frac{7}{2}}{2} \frac{6\frac{7}{2}}{2} \frac{6\frac{7}{2}}{2} \frac{1}{2} \

18-04 Anfaver.

## 190 The Young Man's best Companion.

If a Board or Piece of Glass be ever to irregular, it a be measured very near, by taking the Breadth in to Places, and add the several Breadths together, dividing Total by the Number of Places, and the Quotient will the mean Breadth; which multiply by the Length, is

Having the Breadth in Inches of any Board, or Piece Glass, to know how much of Length of that Board, Piece of Glass, will make a Poot superficial.

Quotient will be the Length of that Board that will me a Foot.

## worten ad the good example to of brief a story

If a Board be 9 Inches broad, what Length of that Boa will make a superficial Foot?

9) 144

Anfaver 16

Proper Directions for Joiners, Painters, Glafiers, &c.

Rooms being various in their Forms, take this gene Rule in all Cafes, viz.

Take a Line, and apply one End of it to any Corner the Room; then measure the Room, going into every coner with the Line, till you come to the Place where y first began: Then see how many Feet and Inches the Strict Contains, and set it down for the Compass or Round; the take the Height by the same Method.

Glassers are to take the Depth and Breadth of the Works and multiply one by the other, dividing by 14 Glass being measured as Board.

Having thus shewn the Methods of casting up Dime fions, I come now to Particulars; and the first of

# diband Glaffers Work, by the Foot.

Breadth, which will produce the Content, as above and

Exact

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Example.

Cross Multiplication tet. In.

8-9 high. 7-3 broad.

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By Practice. Feet. In.

7 Feet

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the Windows are arched, or have a curved Form, no wance is made, by reason of the extraordinary Trouble, Waste of Time, Expence or Waste of Glass, &c. And Dimensions taken from the highest Part of the Arch. n to the Bottom of the Window, from the Height or gth; which multiply by the Breadth, and the Product bethe Answer in Feet, &c.

lasiers are often so very nice, as to take their Dimen-, and to measure to a Quarter of an Inch.

Example.

long. t iquare Yaras don it com

MI IS

nted be to leeb 4, and

-41

las is measured by the Foot, as is said before; and the of Work is as follows; viz lish Glass per Foot

ach and Crown-Glass mon Work, Leading mcladed, for every Foot ?

Coff non coloured a Coats in Oil, per l'ord - sin Leading old Glass per Foot amon Diamond Squares, each

dnut-tree Colour

Painters

Painters Work by the Yard.

WHEN the Wainscot of a Room is painted to measure round the Room with a Line, as a before, and the Height is to be taken by gitting as over all the Mouldings from the Top of the Comic the Floor; then multiply the Compass by the Height, you have the Content in Feet and Inches; which may reduced into square Yards, by dividing by 9.

Example 1.

A Room painted.

Being 45—8 in Compals What is the Content in to

Dimentions taken from the highest fort of the Ar in the Bottom of the Window, drom the Rether the which orderly by the Breadin, and in the tros

be the Answer in see, Se. laice are one Winden. lainer are often io very nice, as so take one of the Whinlen, and to measure to a Quarter to an inch.

Yards 53 -2 - 6 Answer co.

Example 2.

If the Height of a Room painted be 12 Feet 4, an Compass 84 Feet 11; what square Yards doth it con Answer, 116 Yards 3 Feet 3 2.

Feet. In. 84—11 Compai. 12F. 4 high

In 1019—00 4 3 28—03 3 3

9) oot, as is 150 37 1 as and (e

Yards 116-032 Ans.

Note, Double Work lowed in Window-Shin Sash-Frames and Mar pieces are reckoned by the felves, unless the Mar pieces stand in the Wai and then they are to be fured as plain Work, ducting nothing for the cancy.

Common coloured, 3 Coats in Oil, per Yard on On old Colour

Walnut-tree Colour

A Franch Light Indow

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ainters als; wh act by 9

What Feet 3

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1	's best Companion. 193
the Commission of the	Lingship was dead a li and lid.
A Frames, each	19 19 10 10 10 10 10 10 10 10 10 10 10 10 10
A Frames, each Lights, each	0-1
indow Lights, one with a	nother o-3
on Calements ————	3421511 500 0-3
Foiner	Work.
nting the String wherever inters do wherever the B as; which multiply one int	by measuring-the Height (in- the Plane goes, as well as the rush goes) and then the Com- to the other, dividing the Pro- s the Answer in square Yards.
	ample:
What is the Content of a feet 3 long, and 6 Foot 6	Piece of Wainfcotting that is
Feet. In.	The Length and Breadth
9-3 6F 6	being multiplied together, brings it into square Feet;
01.0.	which divided by 9, (the
55-6	square Feet in a Yard) pro-
Inch. $\frac{1}{2}$ 4—7 $\frac{1}{2}$	duces 6 Yards \( \frac{2}{3} \) for the An-
g) 60-11 (6 Yds 3	
54	you'd have no Cour o'A. I.
4	The Lagrange of the Comme
People Wales	destropolis de vivo dello
Conduction in the	Line and privations was 4
Crofs Multiplication, thus Feet. In.	harpon a new who can shall all the
9-3	and the second
6-6	or
applied the transition of	
4-6	- C
1-6	Land West
$I_{\frac{1}{2}}$	()
60_11 se before	shiek disside by . 53
	which divide by 9, &c.
	Core

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Work we Shin and a work on the work of the work on the work of the work on the work of the work on the work of the

194 The Young Man's best Companion	201
Once more.  There is a Room wainscotted, the Compass of which 47 Feet 3 Inches, and the Height 7 Feet 6 Inches; what the Content in Yards square? Answer 39 Yards 3.  Feet. In.	Floor 6 Inches
47—3 Compais. 7—6 the Height.	Feet.
6 In. ½ 23-7½ on G and DATT TO SUIT TO	26-
9) 354-4½ sand sale iversive grand admin	98-
Anf. 39 Yds 3 or 3 The Prices per Yard.	24-
For good Wainscot - 6- Wainscotting, not finding Stuff, &c. 2	13,14-
Coarse Wainscotting  Deal Wainscot, finding Stuff  Not finding Stuff  1-	Vote, In
Carpenters Work.  R OOFING, Flooring, and Partitioning, the principal Carpentry in modern Buildings, are measured by the Square of 10 Feet each Way, that is 100 square Feet.  For Roosing, multiply the Depth and half Depth by the Pront; or the Front and half Front by the Depth, and you'll have the Contents.  The Dimensions are taken in the Feet and Inches.  Example.	n measu or in Fe in, Hea e Conter Note, In u, and i of the W nyou mu, u, and i
How many Squares doth that Piece of Work contain the measures 199 Feet 10 Inches in Length, and 10 Feet 7 Inches in Height? Anjawer 21 Squares 14 Feet 10 Inches 3.  Operation.  The Division is performed by pointing off two Places towards the Right-hand, and 10 F. 7 high. the Number on the Left are	There are Building in-Corn afe-Correg, Dreff thring methorn-
Squares, &c.  1998—4  6 $\frac{1}{2}$ 99—11  1 $\frac{1}{6}$ 16—7 $\frac{19}{12}$	les, Cel pola's, Carpen
21,14-1012 Anfw. 21 Squares, 14 Feet 10 In. 12. Again.	ooring, Not fine

Again. which Floor be 49 Feet 7 Inches 4 Parts long, and 26 Wha

finches broad; how many square Feet? The Operation by Cross-Multiplication.

Parts. Feet. 294-0-08--0---0 15--2----0 24-6-

13,14 - 8 - 4 Anfw. 13 Squ. 14 Feet, 8 In. 4 Pts.

lote, In measuring Roofing, no Deduction is made for Lights, Chimney Shafts, &c.

measuring Flooring, from the Content of the whole or in Feet, take the Content of the Vacancy for the n, Hearths, &c. in Feet, and the Remainder is the

Content; which bring into Squares as before,

Note, In Partitioning you must measure the Doors, Doors, and Windows by themselves, and deduct their Content of the Whole, except by Agreement they are included; and asou must mention in the written Agreement, Doors, Dooru, and Windows included.

There are divers Sorts of Carpenters Work belonging to Building, viz. Cantaliver-Cornice, Modilion-Cornice, m-Cornice, Guttering, Rail and Ballusters, Lintale, Pentple-Cornice, Timber-front, Story, Brest-sommers, Shelg, Dreffering, &c. all which are measured by Lineal or uning measure. There are also Doors and Door-cases, athorn-Lights with their Ornaments, Balcony-doors and les, Cellar-doors and Curbs, Columns and Pilasters, pola's, &c. all which are valued by the Piece.

Carpenters Work is done at the following Prices, viz.

coring, finding Boards, the Square -Roofing

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Agaise

	1. 1
Roofing with Oak	2-N
Not finding Timber	0-1
Partitioning per Square	0
Not finding Timber	0-0
Stairs with Rails and Ballusters complete -	1-10
Sawing of Oak and Elm per 100 Feet -	- 0-0
Fences for Trees	_ 0_0
Oak Timber is commonly fold for 40 s. p	er Tun th
40 folid Feet) in the Place: Ash 30 s. and	Film ag
Tun.	. Tim 20 1
* 4111	

Note, Carpenters measure the Timber Frames of any Buing, (which they call the Carcase) by the Square of 10 persicial Measure, or 100 square Feet, as hinted before.

#### Sawyers Work.

In relation to the Method used by Sawyers in measure their Work. When they work by the Great (as they is most commonly they measure their Work by the superfice Foot; so there is no great Difficulty in taking the Dimessions; for they account the Depth of the Kerf for Breadth, and the Length for the Length. The Dimessions being thus taken in Feet, the Content of one K superficial may be found by multiplying the Length by Breadth; and then having found the Number of Feet one Kerf, multiply it by the Number of Kerfs of the in Dimensions, and you will have the Number of Feet them all.

Note of, When thus they have cast up the whole co tent of their Work in Feet, they are paid for it by the Hu dred, that is, 100 Peet.

adly, That if the Kerf be but fix Inches or less in Dep then they have a Custom to be paid for Kerf and half, they express it) i. e. for half so much more as it comes by Measure; and the Reason they give for it is, that to Trouble is so much the more on account of often histories or removing and new binding their Timber, and therefore they insist on it as a customary Price.

3dlv. For breaking Work, (that is, for cutting a Piece Timber or Tree through the Middle, and Slabbing it, is cutting off the outlide Pieces) if the Kerf be more than ubly, In one bray Kerfs Breaking Washing Washi

Work th

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Inches deep, they are paid by the Foot Lineal or sing-measure, at different Prices, according to the loss Depths of the Kerf; and are as follows:

Inabe	s deep.	d.	grs	Mess mills
	15	1		o to situe
	18	1	2	rule organisti
	20	2		
	22	2	2	
	24	3		distantibA •
	26	3	2	per Foot.
	28	4	sta.	Ly and wo
	30	4	.2	304, 1,
	32	5		
	34	5	2	
	36	6		1104-18

why, In some Places it is customary to allow the Sawyer one breaking Kerf in a Tree, tho' there be never so by Kerss deep in it.—But some Sawyers claim to have Breaking. Work, and half Hundred-Work; that is, they have four Kerss deep, then they will have two aking. Work, and the other two, Hundred-Work.

Work, In sawing Bevil-Work, as Hips, Sleepers, &c., &c. in Bevil-Frames, Posts or Puncheons in Polygo-Turrets, &c. also Cantrails, &c. for these they work the Hundred, but always reckon Kerf and half for such of Work; that is, they reckon half as many more Feet Work than there is really performed.

Bricklayers and Tylers Work.

#### Of Walling.

JALLING is measured by the Rod Statute-measure, being 272 Feet and I superficial. The Measure, being 272 Feet and I superficial. The Measure their Dimensions is thus: For a Wall round on the like, they measure the Length by a Line, gover the Buttresses; and for the Height they measure the Mouldings (pressing the Line into them) even the Middle of the Coping: They likewise take notice the Thickness of the Wall, that is, how many half this in Length the Wall is in Thickness; for three half the tast is, a Brick in Length, and one in Breadth, is that is, a Brick in Length, and one in Breadth, is that is, a Brick in Length, whether less or more, the reduced to that Thickness, by this Rule, wiz. Multiply

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Piece

then

tiply the Product of the Length and Height, by the Nober of half Bricks that the Wall is in Thickness; Product divide by 3, and then the Quotient by 272 being generally neglected in Vulgar Working) and Quotient will be Rods, at a Brick and half thick dard-measure.

Example.

Admit the Face of the Wall measure 4085 Feet, and Thickness be two Bricks and half, or five half Bricks thow many Rods doth it contain?

4085 5 3) 20425 272)6808 25 Rods, Answer. 1368

When the Work is wrought decimally, then you deby 272 \frac{1}{4}, or 272,25, which gives the Quotient some less. But the Measuring of Brick-Work may be shown by having the Rod of 16 Feet \frac{1}{4} centesimally divided too equal Parts, with which you take the Dimensions the Length of the Wall in those Rods; and 100 Parts tiplied by the Height, give the Content in Rods, of Wall that is a Brick and half thick. Deduction must made for Doors, Windows, &c.

A Table to reduce Brick-Work to Standard-men

Brick.

Substract  $\frac{1}{3}$ Add  $\frac{1}{3}$ Add  $\frac{1}{3}$ Reduces to a Brick and  $\frac{3}{4}$ Multiply by  $\left\{ \frac{3}{4} \right\}$ 

Example.

Suppose a Garden Wall to be 254 Feet round, and Feet 7 Inches high, and three Bricks thick; how Rods doth it contain?

This B

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Take Width of the Housength; ent of wareadth.

Note,

The Young Man's best Companion.

199 In this Operation, the Aggregate, or Total, is multiplied by z, because twice 3 is 6, the Number 3048 of half Bricks; and that 127 reduces the Work to Standard-measure, as by the Table above.

272) 6392-4 (23 1 Rods

## Of Chimnies.

This Brick-Work is commonly agreed for by the Hearth, ad also sometimes by the Rod; and the Method of taking Dimensions is thus: If the Chimney stands singly, not leanng against, or being in a Wall, and worked upright over he Mantle-tree to the next Floor; it is girt about the Breatt or the Length, and the Height of the Story is taken for be Breadth, and the Thickness of the Jaumbs for the Thickes. But if the Chimney stands against, or in a Wall, hich is before measured with the rest of the Building, then e Breadth of the Breaft or Front, together with the Depth fine two Jaumbs, is the Length; the Height of the Story he Breadth, and the Thickness of the Jaumbs the Thick. es. But if the Chimney stands in the Corner of a Room, m has no Jaumbs, then the Breadth of the Breast is the readth, the Height of the Story the Length, and the hickness the Thickness. And for the Shaft, it is combonly girt in the smallest Part, for the Length; and the lickness of both Sides, for the Thickness; in Consid.raon of the Widths, Pargiting, Scaffolding, &c. Note, There is nothing to be deducted for the Vacancy be-

wen the Hearth and the Mantle-tree, because of the Widths

d the Thickening for the next Hearth above.

Gable-Ends.

Take half the Perpendicular for the Breadth, and the of the House for the Length, or half the Width of e House for the Breadth, and the Perpendicular for the ength; which brings the Measure to an Oblong, the Conm of which is found by multiplying the Length by the readth, &c.

Note, There are several other Things in Bricklayers Work; Cornice, Facias, Straight-Arches, Cheme-Arches, Hips and Valleys

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Valleys in Tiling	and	Water-	ourses:	All w	bich are
sured by the Foo Pilasters, Rustic	C 02 0	rk, &c. q	which are	leafure value	d by the Pi
For Walls, find	ing A	Materials -		00	d. O per Ro
Not inding	Mate	rials-		ĵo.	o ditto
For Tyling, find Not finding M	lateri	als——		05	O per Squ
for Tyling, find	ing A	Materials,	ex- }0	0013	o ditto
For stripping wi	thout	taking d	own-o		6 ditto.
With taking d	own		0		o ditto.
For Pointing			0	02	o ditto.
Pavement for the Square-yard.	Zafh-	Exam	ple.	ind in	fine cand,
If a Cellar, V. Bricks, or pitches and 6 Yards 2 Fe contain? Answer	Vash-	Exam house, o h Pebble, oad; ho	ple. r Court- being g	yard be Yards	paved w
If a Cellar, V Bricks, or pitched and 6 Yards 2 Fe	Valh- d wit et br	Exam house, o h Pebble, oad; ho	ple. r Court- being g	Yard be Yards leet, a	paved w
If a Cellar, Versicks, or pitches and 6 Yards 2 Fesontain? Answer	Valh- d wit et br	Exam house, o h Pebble, oad; ho	ple. r Court- being 9 w many and 2 F	yard be Yards Yards Yards Ceet, a	paved was 2 Feet los quare doth is by the fi
If a Cellar, V. Bricks, or pitcher and 6 Yards 2 Fe contain? Answer owing Work.	Vafh- d with the branch of the	Exam house, o h Pebble, oad; ho	ple. r Court- being 9 w many and 2 F	Yard be Yards leet, a	paved was 2 Feet los quare doth is by the fi
If a Cellar, Versicks, or pitches and 6 Yards 2 Fesontain? Answer	Vafh- d wit et br 64	Exam house, o h Pebble, oad; ho	ple. r Court- being 9 w many and 2 F	yard be Yards Yards Yards Ceet, a	paved was 2 Feet los quare doth is by the fi
If a Cellar, V. Bricks, or pitched and 6 Yards 2 Fe contain? Answer	Vafh- d with the branch of the	Exam house, o h Pebble, oad; ho	ple. r Court- being 9 w many and ½ F	yard be Yards Yards cet, a F.	paved was 2 Feet los quare doth s by the fi
If a Cellar, V. Bricks, or pitched and 6 Yards 2 Fe contain? Answer	Vafh- d wit et br 64 F.	Exam house, o h Pebble, oad; ho	ple. or Court- being 9 w many and ‡ F	yard be Yards leet, a	paved was 2 Feet los quare doth s by the fi
If a Cellar, V. Bricks, or pitched and 6 Yards 2 Fe contain? Answer	Vafh- d with et br. 64	Exam house, o h Pebble, oad; ho	ple. r Court- being 9 w many and ½ F	yard be Yards leet, a	paved was 2 Feet los quare doth s by the fi

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ralued by the Square of 100 Feet; in some Places to Rod of 18 Feet square; that is 36 square Yards, 4 Feet.

In Tyling and Slating, where there are Gutters and leys, there is commonly an Allowance, which is to take length of the Roof all along upon the Ridge, which les the Gutter double Measure; which in some Places lowed, in others not. Sometimes there is an Addition hollow Ware, that is, Ridge-Tiles, Gutter-Tiles, mer and Dormar-Tiles; and here Customs differ: For one Places they account one superficial Foot for every a lineal or running Measure; then 100 Feet lineal is loned a Square. In other Places, for every 100 of Tiles they reckon one Square.

Plaftering

hof two Kinds, viz. First, Work lathed and plattered. mimes called Cieling. Secondly, Plastering upon Brickk, or between the Quarters in Partitioning, by some: kd Rendering; both which are measured by the Yard. are, as the Joiners and Painters do. In taking Dimions of Cieling, if the Room be wainfcotted, they older how far the Cornice bears into the Room, by ting up a Stick perpendicular to the Cieling, close to Edge of the uppermost Part of the Cornice; and meathe Distance from the perpendicular Stick to the infcot; twice which Distance must be deducted from: length and Breadth of the Room taken upon the or, and the Remainder is the true Length and Breadth the Cieling: As suppose a Floor is 24 Feet long, and Feet broad, and the Cornice shoots out 6 Inches; deha Foot for both Ends, and the Length of the Cieling. 13 Feet; and the same for the Breadth; it leaves 17 th broad; which multiplied together, gives the Content. Feet, or 43 Yards and a half.

Th

gth, which Iquare C gth, and or 160 f

larly fqu na Piece ded into 1 fided Piec

3 times 6 is 18

852-10-6 (94 Yds. 6 Feet, 10 Inch. 6 Parts.

Prices per Yard.	s. d
every Yard of common Plastering, finding	}0-9
Not finding Laths -	0-1
White-washing with Size	- 0-1

## Masons Work.

HE Masons Work, consisting of Stone, is of two Sorts, viz Superficial and Solid. Pavements, and Face of Stone-walls, Houses, &c. are measured as the work. If the Work have Ornaments, as Capitals, theres, Rails, and Ballusters, &c. then they are valued the Piece.

every Foot of Plain-work in Walls, &c.	- c
rough Stone-wall, with Lime, 16 Feet ½ long, and 1 Foot high, per Rod	}:-:
hout Lime, per Rod	} <del>-</del>

#### Prices of Stone and Urns.

Inch.

F Pla

1 18

lough Paving 1 d. per Foot; Rough Asher, or Copingper Foot; Fine Asher 3 d. per Foot; Base per Foot Carbe per Foot 6 d. Urns 3 Feet high 1 l. 4 Feet high 101. 5 Feet high 2 l. and 6 Feet high 3 l.

#### Land Measure.

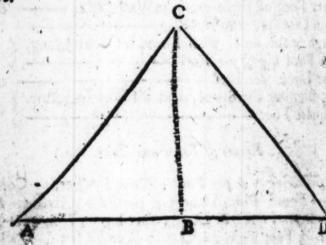
AND is usually measured by the Acre. The Dimensions are taken with a Chain of four Poles in
gth, which is divided into 100 Parts, called Links, and
square Chains make an Acre. Let them be 10 in
gth, and 1 in Breadth, or 5 in Length and 2 in Breadth,
or 160 square Poles; but to find its Content (if not
larly square) it is generally divided into Triangles:
In a Piece of Land of 4 Sides (if not square) may be
seed into two Triangles, Pieces of Sides into 3, and
seed Piece into 4 Triangles.

L

#### To measure a Triangle,

Admit the longest Side of the following Triangle, of A D to be 76 Poles, and the Perpendicular or dotted Li B C to be 30 Poles; multiply 76 (the Base) by 15, the Half of the Perpendicular B C, and it produces 1140: if you multiply the whole Perpendicular by half the B (or longest Side) it will produce the same; which divid by 160, (the square Poles in an Acre) the Quotient gives the Content of that Piece of Land in Acres; and what mains multiply by 4, and divide by the same Divisor, a it quotes Roods, &c.

Note, Always the Perpendicular is drawn from the op fite Angle to the Base, or longest Side, as in the follows Figure.



The Operation.

76 The Base.
15 Half the Perpendicular.

160) 1140 (7 Acres, 15 or 1.

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## The Young Man's best Companion.

All other Pieces of Land (for the most part) must be ided into Triangles, and when measured, their Contents

ded together.

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Suppose an oblong Plat of Ground contains 35 Poles ad, and 185 Poles long; how many Acres is the Con-

Rule.

Multiply the Length in Poles by the Breadth, and divide Product by 160, (the fquare Poles in an Acre) and the notient will be the Answer in Acres; and if the Reainder

Be  $\begin{cases} 120 \\ 80 \end{cases}$  it V alue is  $\begin{cases} \frac{1}{4} \\ \frac{1}{2} \end{cases}$  of an Acre.

The Work.

185 the Length. 35 the Breadth.

925

555

60) 6475 (40 Acres.

640

75 shuft 40 a Quarter.

33 Poles remain.

By the Four Pole Chain.

There is a Plat of Ground that contains 16 lains and 25 Links in Breadth, and 57 Chains and 30. inks in Length; what is the Content of that Piece of and ?

The Content is 40 Acres,

如一次 (515点 京都)

1, and 35 Poles, or almost

40 Acres and a half.

C. Link. 57, 30 Length.

16, 25 Breadth.

28650 11460 34380

5730

Acres 93 11250 cut off five Places

4

No Roods, 45000

40

Poles 18/00000 (93/Ac. o Rood, 18 Poles, 4

Note, 4 Roods or Rods is 1 Acre, 40 Poles 1 Rood Rod, so that 1 Rood or Rod is 1 Quarter of an Acre.

Note also, that the above Chain, commonly called Ga ter's Chain, contains 4 Statute Poles in 100 Links, so th any Number of Chains are no more than so many 10 Links, as 4 Chains are 400 Links, and 6 Chains so Links, &c. 160 Statute Poles are an Acre, each Pole b ing 16 Feet and an half; therefore, in a square Chain the are 16 square Poles; and if you divide 160 (the square Pol in an Acre) by 16, (the square Poles in a Chain) the Qu tient is 10, the square Chains in an Acre.

A square Chain contains 10,000 square Links, for it

contains 100,000 square Links.

To reduce Statute to Cuftomary Measure.

According to a Statute made in the 33d of Edward to First, and another in the 25th of Queen E maketh, a Statute Pole is 16 Feet and an half long, (as said before) in divers Parts of England there are used Poles of 18, other of 21, and some of 24 Feet long, called Customary-Me sure, being in Use according to the Humour or Custom the Place where they are taken. To turn therefore of sort of Measure into the other, admit Statute Measure be turned into Customary, do thus: Multiply the Number of Acres. Roods, and Poles Statute Measure, by the square half Yards, or square half Feet in a square Pole of Statutes.

Measure, fquare Momar Aeres

Example ares of

In a Sta 21 squar 22 squar 24 square 24 session 25 square 25 square 26 square 26 square 26 square 27 square 28 squar

In 543 any Acre alf to the

cres 2 R

121)

The Resident not a their Parties, their Parties, thomasy tes 34 Pc. Note, Cu a 160 fqu

the Bign

resource, and divide the Product by the square half Yards, square half Feet contained in the Pole of the Measure assumption of the Quotient gives the Answer in the latter.

Aeres, Roods, &c.

Example. In 172 Acres Statute Measure, how many

Acres.

172 Statute Measure.

In a Statute Pole are 11 half Yards, which squared make in square half Yards; and in a square Pole of 18 Feet 1144 square half Yards, &c. For the Remainder, work inherence, viz. by multiplying it by 4, &c. and the next temainder by 40, &c. as spoke to before: so that the assertion, that 172 Acres Statute Measure make 144 ares 2 Roods, and 4 Poles of such Customary Measure.

An Example of the contrary.

In 543 Customary Acres of 18 Feet to the Pole, how my Acres of Statute Measure, being 16 Feet and an all to the Pole?

543 Cuftomary.

144 Square half Yards in a Customary Acre.

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121) 78192 (646 Statute Acres.

The Remainder 26 multiplied by 4, produces ro4, lich not amounting to a Rood, should be multiplied by 4, their Product is 4160; which divided by 121, quotes serves, and 46 remains. So the Answer is, that 543 allowary Acres, of 18 Feet to the Pole, make 646 tets 34 Poles, and  $\frac{46}{127}$  of a Pole.

Note, Customary Acres, as well as Statute Acres, con-

the Bigness of the Pole.

Solid

rs that of Timber, Stone, Digging, Liquids, &c. an the Rule for Working is to multiply the Length, take in Inches, and the Breadth together, and then that Product by the Depth or Thickness, and the last Product will b the Content in Cubic Inches, which, if Timber or Stone divide by 1728, (the Cubic Inches in a Foot folid) and the Quotient gives the Contents in folid Feet.

Example. If a Tree be 16 Feet long, and 18 Inches

fquare; how many folid Feet doth it contain?

192 the Length in Inches. 324 Breadth and Thickness.

5 17 6 March 1912 4516 19

768 384 576

1728)62208(36 Feet. 5184

> 10368 (0)

Decimally. By Practice. 1-6 1,5

Square. 1,5

2,25 Breadth. 16 Length.

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Feet 36-0 Anfaver.

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40 Feet of round Timber is a Tun or Good.

50 of hewn 3 Timber & Timber.

27 Feet is a Yard.

282 Inches is a Gallon of Ale or Beer.

231 Inches is a Gallon of Wine.

Suppose there is given an oblong Piece of Timber, of Breadth is 2,25, and Thickness 1,64 Feet, and ngth 36,5 Feet, how many folid Feet are contained erein?

2,25 Breadth.

1.64 Thickness.

900 1350 225

3,6900 36,5 Length.

184500 221400 110700

134,68500 Aufwer 134,685 folid Feet, or 134 1

## Of Timber Measure.

THE N at any time you would know the Content of any Piece of Timber by Vulgar or Decimal Arithit, observe what follows, viz. The Tree being girted, one fourth Part taken for the Side of the Square; multhe Length of the Side of the Square in Inches into and that Product by the Length in Feet; which last hall divide by 144: But if you multiply by the Length laches, then your Divisor must be 1728, and if any remains, divide such Remainder by 12, and the tient will be the odd Inches.

Example.

## The Young Man's best Companion.

Example. Suppose a Piece of Timber 15 Feet long, and a Que of the Girt 42 Inches; what is the Content of that Pi The Work.

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18 th

42 Inches the Side of the Squa napole there is given bos . root! 168 Lecia law Panal

> 1764 15 Feet in Length. F. I.

144) 26460 (183-9 Anfaver. 144 : 1206

> 1152 . N. 30 1. 3.00 540 432

12) 108 (9 Inches. 007011

Note, In this Example 1764 is multiplied by 15 in Line.

But the foregoing Example may be worked shorter Decimals, thus:

5 3,5 the Side of the Square 42 Inches, 1 3,5

David white -175 tanty symbol

105 12,25 The Product are Feet.

15 Feet the Length.

6125 1225

districtly o

wis hi but

183,75 the Cont. viz. 183, 755 or \$ as be But this common Way of taking i of the Company

the Side of a Square, which is equal to the Content of

Grele in round Timber, is erroneous, and gives the bildity somewhat less than the true Content: but the true Way is to multiply haif the Diameter by half the Comsis, and then that Product multiply by the Length, which wide by 1728, and the Quotient is the Content. If you must come to measure the End of the Piece, you may now the Diameter by this Proportion, viz. as 22 is to 7, 6 is the Compass to the Diameter. Or you may find the side of a Square of a and Piece of Tim- 2821.

and Piece of Timer by this Rule, viz. multiply 2821 by the inches of the Compass, and cut off 4 Figures to the Right-hand of

Inch. 66 the Compass.

long and a leet a tacker known

16926 16926

Having the Breadth and Depth of a Piece of Timber or sone; to know how much in Length of it will make a blid Foot; multiply one by the other, and let the Product to Divisor to 1728, thus:

24 broad.

18 thick.

192

Squa

oddii

432) 1728 (4 Inches in Length.

And thus you may make a Table to serve all Breadths and Depths, by which much Labour may be saved in mulplying and dividing, and yet measure any Piece of Time-

In square Timber, you must make the Inches squared a divisor to 1728, and the Quotient will be the Answer in the of Length, that will make a Foot solid.

If a Piece of Timber be 8 Inches square, what Length it will make a Foot?

64) 1728 (27
Answer, 27 Inches, or
2 Feet 3 Inches in
Length.

448

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F. B.

here is

The Foung Man's best Companion. Example 2. How many Yards of Digging will there be in a Vaule 1825 F. 4 long, 15 F. 8 broad, and 7 F. 2 deep. times 5 is 15. 76-00 0 30 Waltibly the Circumference 2 that Product by this Declmal, o. ded will be the Content of Yardo-08g To feel the hiperbenal Content of 4 F. is + and sly half the both of the \$2-8 4 F. 13 3 fer ace, of the Pale by the Kent Product, divided by of will for 306 If the Pyramid or Code be 47 con Part of the Top be wenting, and \$2 -872 198- 5 illw adgestlessel on ve beilgis - Td. F. In. M. A. stell 27) 2976-8 11 10-61-8 DE 1 11 00 3 fand, of Figs or Cube, old Load of Sand will lay 06 Example 3. here is a Mote that is 648 Feet long, 24 Feet broad, feet deep; how many Floors? 648 long. to tive a more kepotition b 24 broad. Figures, to expens which a h tically before expressed. 2592 And They Protect 1296 fome of which is read Boards, Clark, Markle of rec 15552 Dingenfions are talcen in Feet h given in focase Feet.

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1 324) 1 39968 (432 Floors. Anfwer.

Solid Bodies being frequently painted, it is necessary know how to find their Superficiality: To find the fun ficial Content of a Square, or many-fided or round Pills multiply the Sum of the Sides, or Circumference, by Height in Feet; and the Product divided by 9, will fquare Yards.

Of a Globe.

Multiply the Circumference in Feet by itself, and the that Product by this Decimal, 0,0353678, and this last P duct will be the Content in Yards.

To find the superficial Content of a Pyramid or Co multiply half the Sum of the Sides, or half the Circu ference, of the Base by the Sant Height, in Feet; and Product, divided by 9, will be square Yards.

If the Pyramid or Cone be not complete, that is, Part of the Top be wanting, add together the Circum rences at Top and Bottom, and half their Sum, being m tiplied by the flant Height, will be the superficial Conti

Note, A folid Yard fquare of Clay will make about 800 Bricks; and the Price of making is 7 or 8 s. a Th fand, 3 Bags (or Bushels) and half of Lime, and ha Load of Sand, will lay 1000 Bricks.

500 Bricks 1000 Plain Tiles. \ make a cad. 25 Bags 1 C. of Lime.

Erenble.

T may not here be improper, as well for refreshing Memory, as for improving the Understanding, and for ing the Mind with proper Notions and Ideas of Mealur to give a short Repetition by demonstrative geomet Figures, to explain what hath been verbally and arith tically before expressed.

And first for Planometry, or Superficial or flat Mea fome of which is measured by the Foot Square; as Boards, Glass, Marble, Freestone, and Pavements. Dimensions are taken in Feet and Inches, and the Co given in square Feet.

Example 1.

Suppose there is an Oblong or long Square, let Board, Glass, or Pavement, &c. that contains on the lo Side (or the Length) 24 Feet and half, and the shortel (or Breadth) 14 Feet 1, as in the following Figure,

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n the lo Mortes Multiply the Length by the Breadth, and cut off and Places to the Right-hand as there are Decimals in another and Breadth.

Example 2006 a Board or Piece of Glass be in the Form of the First, called a Rhombus, that is, in the Shape common Pane of Glass, or Diamond square.

Length of any of the Sides, (for they are all equal) to a many Places to the Right hand as there are all Places in both Multiplicand and Multiplier, as hefore As (approximately the Breadth of R. S. Freet as

and the Length of the Side to be 8 Feet, 32 Parts; be Work will appear thus:

Here the Multiplication is as in whole Numbers, and the Content or Answer is found to be 71 square.

Feet, and \(\frac{3}{100000}\) ten Thousandths of a Foot, or 4 inches \(\frac{1}{2}\).

is separated by a Comma, as above directed, and many 10000 Parts of a Foot,

in, admit a Piece of Measurement to be the Form in the Second, called a Rhomboides; its Length 17 Parts, and its Breadth 8 Feet 58 Parts.

# 24 2 The Young Man's best Companion.

F. P.

17,25 Length.

18,58 Breadth.

The fore mentioned Proposite Sides e and its opposite Angles

13800 8625 13800

148,0050 Answer, the Content is 148 Feet.

Suppose a Board, Piece of Glass, Pavement, or Piece of Land, to represent, or be in the Form of a Triangle three-cornered Figure, expressed as in the Shape of the Third. Every Triangle is half an Oblong Length and Breadth is equal to the Perpendicular and

Note, The dotted Line is the Perpendicular, the b Line the Bafe, and the Line from the Top of the Percular to the deft Angle of the Bafe, is called the li-

The measuring of a Triangle hath been already and therefore I shall defist speaking any further there

The Fourth Figure is called a Trapezium, and of 4 Sides: This Figure; before it can be meatited, be divided into two Triangles; thus wie by a drawn from one Angle or Corner, to the Angle of to it, as in the Figure.

Example 4.

Suppose the Dimensions of the Trapezium beso scribed to be, wiz. the Base 16 F. 67; the one Percular 12 F. 50, and the other 9 F. 68 (as in Fig what's the Content?

The Operation. F. P.

One Perpendicular 12,50 } add

The Sum is 1 1 22,18 06 00

The half Sum is 11,09, which multiply the whole Base 16,67

which is 184 Feet, and 18763 of a Foot, equal Inches and half.

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Min. If two Sides of a Trapezium are parallel, that is, miditant; then add them together, and half the Sum aliplied by the nearest Distance between those two Sides, mes the Content. Or if you measure in the Middle betten two Sides or Lines that are of equal Length, the Antity will be the same.

Note also, The Painting, Plastering, &c. of irregular fices in the Forms of Triangles, or not, if divided as love, may be measured as before; and brought into Yards the Coment is to be so given in) by dividing by 9, as be-

me hewn.

## Of Regular Figures

Igures that have more than 4 Sides are called Polygons, and those of them that have their Sides and Angles and are called regular Polygons.

Regular Polygons have their Names from the Number

their Sides; thus a Figure having

Trigon or Equilateral Triangle.
Tetragon or Square.
Pentagon.
Hexagon.
Called a Nonagon.
Undecagon.
Codecagon.

The Area of a Pentagon may be found by multiplying to found by multiplying to found by multiplying to found by multiplying to found by the Number 1,7204774. Thus the side of a Pentagon be 17 Feet, then the Square therefull be 11 times 11 or 121 Feet.

and its Paris they be folved as fightly:

1. The Diameter being given to find the

R. Multiply the Numbe 47740271

101, and the Product will be the 84790481

17204774 and beerad energy 1700171

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The Young Man's best Companion. 844 Therefore the Area of the Pentagon will be power dalant cellen add them together, add affaile 800 luglied by the peared? Diffance, horween thole two Sides. In like manner, to find the Area of the stand all respective that are of fqual snograf the An-Tetragon, 1,0000000 Plaffer by, inggaxeHirequiar owdon's 3,5080762 as both Heptagon, of Multiply the about Octogon, by Square of the 3.6330124 4,8284271 6-1818242 Decagon, 7,6042088 Undecagon, 9,3656404 Dodecagon, July Tolling A Q1,1961524 Moures that have more than a Sides are called Folygons, and those of them-that have their Sides and Angles the are called regular post of a form the Number their Sides; thus e Pigure having olganil' isroteliu pat 10 dope Ninth, Circle is contained under one Line, called the cumference or Periphery; as ABC. All right Li drawn from the Centre E to the Circumference, are equ and called Radius's, or half Diameters: and the long L through the Centre from A to C, is the Diameter. To divide a Circle in 6 equal Parts, extend the Comp fes to half the Diameter, as from A to the Centre E, the Extent applied to the Circumference will divide it those Parts. The Diameter AC divides the Circle into two eq Parts, each of which is called a Semicircle; and if a micircle be divided into two equal Parts; those Parts wil be II times II of 121 called Quadrants. The Questions relating to the measuring of the Cir and its Parts may be folved as follows: 1. The Diameter being given to find the Circumferen Rule. Multiply the Number 3,14, 5927 by the Dian ter, and the Product will be the Circumference. Note, I Number 3,1416 will be exact enough in most Cases. Example. The Diameter of a Circle being 11 Inch

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Example

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What is its Circumference?

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3,1416 3,1416

Infwer, 34,5576 (or above 341) Inches.

The Diameter being given to find the Area. Rule. Multiply the Number 0,7853982 (or in com-(cales 0,7854) by the Square of the Diameter, and Product will be the Area. ixample. What is the Area of that Circle whose Dia-

A samper of 128 17. and the Product will sense Trains

1.125:7

811.00

Area is of or sa louard spelies

> 7854 15708 7854

Answer, 95,0334 Square Inches.

The Circumference being given to find the Diameter. Rule. Multiply the Number 0,3183099 (or in common 1831) by the Circumference, and the Product will be Diameter. of a Circle being given to 1. remember 2

Example. What is the Diameter of that Circle, whose comference is 34½ Inches ?

=34,5

. 0,318315 50 1ns .031275 tadata M

woole steet is 95,05 \$4 iquapa ipotes 1273240

95493

Answer 10,981695 (or almost 11) Inches.

4 The Circumference of a Circle being given, to find its

Rule. Multiply the Number 0,0795775 (or in common 796) by the Square of the Circumference, the Product be the Area.

L 2

Example.

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Example. What is the Area of a Circle, whose cumference is 34½ Inches?

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1190,25 Answer 94,743900 (oralmost 95) square Inc

3. The Area of a Circle being given, to find its

Number 1,12837, and the Product will be the Diameter

Example. What is the Diameter of that Circle who Area is 95,0334 square Inches?

95,0334	(9,75	9,75
187) 1403	47.80.34 (1) (44	564185 789859
1945) 9434	educes appoint	1015533

9725 05 8 01 0 0 0 0 0

Answer, The Diameter is 11 Inc.

6. The Area of a Circle being given to find its Circ

ference.

Rule. Multiply the square Root of the Area by

Number 3,5449, and the Product will be the Circurrence.

Example. What is the Circumference of that C whose Area is 95,0334 square Inches?
95,0334(9,75 3,5449

75	3,5449 9,75	
	177245 01801	
•	248143 319041	400

34,562775
Answer, The Circumference is 341 In

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To measure the Sector of a Circle. See Figure 10... Case the First. If the Length of the Arc DE and the

Rult. Multiply the Length of the Are by 1 the Semimeter; and the Product will be the Area.

Case the Second. If the Number of Degrees contained in Art, and the Semidiameter be given : 08 ad at sad W

Rule. Makiply the Square of the Semidiameter byothe Imber of Degrees contained in the Arc, and that Pro-At by the Number, 0,0087267, and the Refult will be Area required.

frample. Let the Arc confift of go Degrees or 1 of

Circumference, and the Semidiameter be 31.

3,5	12,25	Borness		0,0087207
3.5	90	111	20,	1102,5
-	-	OI.		

1102,50 174534 872670

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270811120,00 in the Length, and

### Of folid Meafure.

Olid or Cube Measure hath been already defined, as well as superficial Measure, some of the Figures of tich are number'd, 6, 7, and 8. 1 0 1 1 0 1 0 1 1 1 1 1

Eafe thereof: v

To measure a Solid in Form of a Cube, which hath agth, Breadth, and Thickness all equal, you must mulblidity or Content, either of Wood or Stone. A Cube th fix Sides, and is in Shape like a Dye.

### Example

What is the Solidity of a Cube whose Side is 12 Inches?

728 the Solid Inches in a folid Foot.

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## The Young Man's best Companion.

To measure a Solid of unequal Length, Breadth, Thickness; multiply the Length by the Breadth, and Product by the Height; the last Product will be the Meldely the Length of the Arc by Ethe cythell

### .astA of SExample boll and the trees of the Breeze It the Number of a greek contained the

What is the Solidity of a Block of Marble, whose Len is to Feet; Breadth, 5% Feet; and Depth, 3% Feet, miter of Depreter contained in 5,75 fre, and, mar I'm

by the Michael Cock from 1 3,5 Tock Robin will be 2875 Pinns 5-4 Curcumsterrace, and the Samuel 2274 of the 

20,125 10

201,25 the Solidity.

The Cone is measured by finding the superficial lac at the Bottom or Base thereof; which multiply by third of the Inches in the Length, and that Product is folid Quantity in Inches; which Inches divide by 17 and the Quotient gives the Answer in folid Feet.

Example of finding the Solidity of the Cone, decimal without dividing by 1728. died england today to hill

Let the Diameter of the Base be 2 Feet 6 Inches the Altitude 10 Feet 6 Inches.

omeniare a folid to Form of a Cabe, which have -im fine 10 2 2,5 the Diameter. disher diameter. their into themsolves; and 26 h. I re not given the

thy or Contern either of Weed er Stone. A Cape 3 125 W out 3 me of both as as well all

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If the I ren in I eight.

What is the Solid I vo

4,908750 the Area of the Base.

3,5 one third of the Height I di sympsom o? Pyramid, whose Endsore Employ resul

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Mulriply regeller the Sides of the greater 1472625 lygons; muldoly also the Difference of ;

17,1806250 the Solidity in Feetlo nek and box 1119 This Method may ferve for Tapering Timber, or for any In Thing of the Shape represented in Figure of the world land, oduct of the Solidity.

### To measure a Pyramid.

lule. Multiply the Area of the Base or Bottom by one hird of the perpendicular Height, and the last Product be the Content in folid Feet: Or one third Part of the mat the Base, multiplied by the whole Altitude, gives Content also. muluply she som by the Height

#### the Number c. 8 . 92 : 10 drell the Examples of both Ways. ball per visited

Suppose there is given a square Pyramid (or Figure like Spire Steeple) the Side of whose Base is 4 Feet and and the perpendicular Height 18 Feet; what is the Content ?

6,75 3 of 20,25 the Area at the Bafe. 18 the whole Height. 4,5

Product of Diameter

225 5400 180 675

11,50 Answer 12150 as before 20,25 6 d of the Altitude. 128 c.o y gratum

121,50 Anfwer 121 Feet, and 100 or 1.

When one Side of the Base is longer than the other, as hit one to be 2 F. 1 and the other 1 F. 1; then multhe Length of the Base by the Breadth, and that Prothy one third of the Height as before.

If the Base be any Polygon, find its Area by the Rule in Page 218; and then multiply it by 3 of the eight.

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To measure the Frustian or Segment, i.e. a Piece or Part of Pyramid, whose Ends are similar regular Polygons.

Multiply together the Sides of the greater and leffer P lygons; multiply also the Difference of those Sides by self; add the 3 Part of the second Product to the first P duct; multiply the Sum by the Height, and by the Nu ber which belongs to the Polygon in Page 218, so that I last Product be the Solidity.

### To meafure the Frustum or Segment of a Gone.

To meafure a Premail.

Multiply together the Diameters at the Top and Bortom of the Frustum; multiply also their Difference itself; add \(\frac{1}{3}\) Part of the last Product to the sist; multiply the Sum by the Height of the Frustum, and the Number 0,7853982; so shall the last Product be Solidity required.

# profestions is pixed a financial profession files in a freez and

What is the Solidity of the Frustum of a Cone; the I meter of the greater End being 4 Feet, that of the le End 2 Feet; and the Height 9 Feet?

2 Diff. of Diameters.

8 Product of Diameters 4; \(\frac{1}{3}\) of which is 1\(\frac{1}{3}\).

8 added to 1\(\frac{1}{3}\) is 9\(\frac{2}{3}\) which multiplied by 9, the Heipproduces 84.

Then multiply 0,7854

to reduce the second segment is 31416 ... shift one of the second second

Solidity 65,9736 de to ball sale

in lage 215 and then maliply it by ; of the

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### Of Gauging.

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Hei

the Art of measuring of Timber, and that of Gaugor Measuring of Liquors; for both are performed by
the or solid Measure, and therefore not improper closely
sollow one another. For as often as there is found 1728
dor cubic Inches in a Piece of Timber, (of what Form
mer) so many solid Feet it is said to contain: So likewise
the Art of Gauging, so many Times as 282 (the solid
thes in a Beer or Ale Gallon) are found in any Vessel of
the Liquor, so many Gallons is such a Vessel said to hold.
If so of Wine; but in that the Divisor alters, it being
solid or cubic Inches.
And the Gallon of Dry Measure contains 272 \frac{3}{4} cubical

And the Gallon of Dry Measure contains 272 4 cubical

Note, Every cubical Foot in Beer or Ale-Measure, contains 6 Gallons and almost a Pint.

The same in Wine-Measure is 7 Gallons, and almost 2 Quarts.

A cubical Foot of Dry Measure contains 6 Gallons and newhat above one-third of a Gallon.

us Inches make 2 Quarts of Beer or Ale; 70 Inches & Quart, and 35 Inches & a Pint.

To find the Content of any Vessel that hath the Form of Cube, that is, a Figure whose Breadth, Depth, and Length, rall equal, and is very well represented by the Shape of Dye commonly play'd withal.

Rule. Multiply the Side into itself, and then again that bound by the Side; which last Product, if for Been or k, divide by 282, the Inches in a Beer or Ale Gallon; after Wine, Brandy, &c. by 231, the Inches contained a Wine Gaston.

### Example.

Suppose a Cube, whose Side is 79 Inches, I demand the

The land					100%	SEC.	256.00	100	843
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200	100		Comers	47.000	,	-076	Som	100100	O TO

220 The Loung	Ivian 5 oest	Companion:
79. 79	282) 493039 (1	748 Beer or Ale G
711 553	1974	on a scale
6241 79	1363	Wine 231)493039(2
56169 43687	2359 2256	310
493039 Cube Inches.	(103)	793 693
Mario na filografia de la constanta de la cons	gay Velazione	1009
alcon ak a	made the many	(8c)

To find the Content of a Parallelopipedon, which is folid Figure contained under fix Sides, of which the Opposites are parallel, and of the Form of Figure the 12th.

Rule. Multiply the Length by the Breadth, and the Product by the Depth; and then divide by 282 for Bor Ale, and 231 for Wine.

### Example.

Admit the Length to be 95 Inches, and the Breadth Inches, and the Depth 23 Inches: what is the Content Reer and Wine Gallons?

Land Win Caller	95 Length. 62 Breadth.
231) 135470 (586 Wine Gallons	190
1997 &G.	5890
Rem. (104)	

Suppose Depth dalso i

72-224 784

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Note;

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> 282) 135470 (480 Beer Gallons. How is gunge a Copper, ron 8111

If it belof equal Bignell both at 138 the cube Packes that it contains, and then b

Rem. (110) But If it be wider at the Top than

To gauge a Back or Square Tun.

### Example.

Suppose its Length 112 Inches, Breadth 72 Inches, and Depth 48 Inches; what is its Content in folid Inches, also its Content in Beer Gallons?

112 Length.

282) 387072 (1372 Gallons, Anfav. 72-Breadth

and the Project will rever 0701 the 224 784 His il 846

8064 2047 48 Depth 1974

64512

32256

732 564

17072 folid Inches.

(168)

Tobring these Gallons into Barrels, divide them by 36, Gallons in a Barrel of Beer, thus:

26) 1372, (38.

Gallon.

Answer 38 Barrels and or of a Barrel; and for the Remainder 168, it is. fomething above half a

it be tamer : or find to

former the mean District

202: 288

(4)

Note; The Duty of Excise upon strong Beer and Ale, is 652. led per Barrel; Brewers are allowed three Barrels in twenty-three for Leakage, &c. both for firing and fan Beer; and for Ale, two in twenty-two: So that the na Excise of a Barrel of strong Beer to be paid by the comm Brewers, is 5s. 7d. \(\frac{3}{4}\) and \(\frac{7}{23}\) of a Farthing; and of A 5s. 10d. \(\frac{3}{4}\) and \(\frac{7}{17}\) of a Farthing; and for small Beer 3d. \(\frac{1}{2}\) and \(\frac{2}{3}\) of a Farthing.

How to gauge a Copper, round Tub, or Cafe.

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If it be of equal Bigness both at Top and Bottom, for the cube Inches that it contains, and then bring it into Gallons as before.

But if it be wider at the Top than at the Bottom, or the contrary; then take the Width or Diameter of the Tofomewhat above the Middle, next to the broadest End, it be taper; or find the mean Diameter thus: Suppose the Bung Diameter to be 26 Inches, and the Head Diameter of the Cask to be 23 Inches, the Difference betwee which is 3 Inches, two thirds of which make two Inche which added to the lesser of the two Diameters, make for the mean Diameter fought. Having the mean Diameter, proceed to find the Content in solid Inches, thus: Fi square the mean Diameter, multiply that square by 0,785 and the Product will give the Content of the Liquor at of Inch deep, and this multiplied by the Length will give the solid Inches in the Copper, Tub, or Cask.

Suppose the mean Diameter to be 72 Inches, and the Length 56 Inches.

72 72	4071,5136			
144 504	244290816 203575680			
9184 Square 97854	228004,7616]			
20736	1833 1833			
1472	Call of the call			

^{4071,5136} Content at one Inch deep.

36

The above found folid Inches 228004 brought into Gal-B, make 808, and 148 folid Inches remain, fomething we half a Gallon; in all 22 Barrels, 16 Gallons, and 1/2 (Beer.

Again, Admit the mean Diameter of a Cask of Wine to 14 Inches, and the Length 72 Inches, what's the ment in Wine Gallons?

14	ii na	0,7854
56		79686) 00 10 (223 7854
196		153,9384
		3078768 10775688
	231	924
		1843 1617 Anfwer, 58 Gal. nearly.
		2265
		1866 &c.

The Content of a Spheroid may be found thus: Multy the Square of the shortest Diameter by the longest ameter, and then divide by 538 for Beer Gallons, and the source of the state of the square of th

### Example.

Suppose a Spheroid whose shortest Diameter is 74 Inches, the longest 125 Inches; what is the Content in Beer Wine Gallons?

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The Young Man's best Companion. 1900742 00802 18000 74. 00 10 1 296 518 5476 the Square of the shortest Diamet 125 the Longest Diameter. 27380 65712 538) 684500 (1272 Gallons of Beer. 538 1465,&c. 7 (164) 441) 684500 (1552 Gallons of Wine. 2435;&c. (68)To find the Content of the Frustum of a Spheroid: twice the Square of the Bung Diameter, add once Square of the Head, and multiply that Sum by the Leng Then for Beer divide by 1077; and for Wine Gallo divide by 882. Example.

A Cask whose Bung Diameter is 23 Inches, Head D meter 21 Inches, and Length 27 Inches; what is the C tent in Beer and Wine Gallons?

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529 Itwice the Square of the Bung Diam. 441 Jonce that of the Head Diameter. Pounder in the Lable, which (bern)

to river Number : That if the land 27 the Length at a Ch saint man Le lupur the Table, therefore its Root,

10493 2998

1077) 40473 (37 Beer Gallons.

१० ०० वर्षा ्राज्यानामार्थ 3231 882) 40473 (45 Wine Gallons 8163 7539 Store that the Root of \$17 44100 1010 0 101100 , 101019 (624) (783)

Extraction of the Square and Cube Roots, of great Use in Measuring, Gauging, &c.

### The Square Root:

A Square Number ariseth from the Multiplication. of a Number into itself, the Number so multibeing called the Root; thus 4 multiplied by 4, prooth 16; fo 16 is a square Number, and 4 is the Root, mof; fo also 4 is the Square of 2, for twice two is 4. nine is the Root of 81, for 9 times 9 is 81, &c. uly, To extract the Square Root of any Number, is to another Number, which multiplied by (or into) itself, duces the Number given; and after the Root is found, a Multiplication is a Proof of the Work.

1/1, Square Numbers are either Single or Compound. why, All the fingle Square Numbers, with their redive Roots, are contained in the following Table, viz.

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## 232 The Young Man's best Companion,

5thly, When the square Root of any Number less the 100 is required, and that Number is not expressed in Table above; then you are to take the Root of that square Number in the Table, which (being less) comes the near to the given Number: Thus if the square Root of 50 w required, then, since 49 is the nearest square Number the Table, therefore its Root, 7, will be the Root of given Number, nearly.

6thly, A Compound square Number is that which is p duced by a Number confisting of more Places than a multiplied by itself, and is never less than 100: 50,729 Compound square Number, produced by the multiply

27 into itself.

fify known by the foregoing Table of fingle Squares: to extract the Root of a compound Number of several Places, observe the following Directions.

### Example 1.

Let the square Root of the Number 45796 be require

1. Set a Point over the Place of Units thus, 45796, fo fuccestively over every second Figure towards the I hand, as thus, 45796; and thus, 45796: But in D mals, you must point from the Place of Units town the Right-hand, omitting one Place, as above; andif Place of Decimals are odd, affix a Cypher towards Right hand of them to make them even. Your Nur thus prepared, draw a crooked Line on the Right of Number, as in Division: And indeed the Operation of square Root is not much unlike Division; only there Divisor is fixed, and in the square Root we are to fi new one for each Operation. I fay, having made a cr ed Line thus, 45796 ) feek in the foregoing Table the nearest Square to the first Point on the Left-hand, w here is 4, the Root of which is 2, which Root place the Right-hand of the crooked Line, and fet its Squ under the faid Point, as below:

45796 (2

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Then bring the Right

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fubtract it, and there remains o: To the Remainder down the next Point 57 thus to, . inchion O ada afdaod! Part of the Root, wire. s tot of book t bes its

45796 (2

all the Refolvend; then double the Root of the Point, and place it on the Left hand of the Resolvend,

and I find I can have it a times, which a I place !

Quotient and in the Divitor, and procieding as being 45796 (2 45 g5 (214 Rock. 4

4) 057 the 4, the double of the Root 2, thus placed on the hand of the crooked Line, the Divisor, and seek how 4, the Divisor, can be taken in s, the first Figure of Resolvend 57 (for you are to omit the last Figure to-the Right-hand) which here is once, place one to the tof the Root 2, and also of the Divisor 4, thus:

> In the last O eration, I pier 30754 to the Refolver those which Dr. 22 require placed on the Root, pro-

41) 057 then multiply the Divisor (now 41), by the Figure last min the Root, viz. 1, place it under the Resolvend, fibtract it therefrom.

> 45796 (21 ..... 1 to the favore Hoor of the

41) 057

then bring down the next Point, viz. 96, and place it the Right of the Remainder 16, for a new Resolvend

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What is the square Root of 12299049 (3507 the Root

1st Divisor 65) 329 Resolvend. 325 Product.

maylors vead Divisor, 700) 490 Resolvendo 000 Product.

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Root.

Note, That when the Divisor cannot be had in the Reul, then place a Cypher in the Quotient, and also on the thaf the Divifor, and then bring down the next Square, win the fecond Brample above may be feen. I txon and Note further, If any Remainder happen to be after Exaction, you may proceed by annexing Pairs of Cyphers to the of the given Number, fo come to what Exactness

Note also, Such Numbers given for Extradion that leave unders, are by some called Irrationals, because their a cannot be exactly discovered, but full there will somegremain, though you work by whole Numbers or Fraci: As in the Example above, where the Remainder is

### The Extraction of the Cube Root.

O extract the Cube Root of any Number, is to find another Number, which, multiplied by itself, and Product by the Number found, produces the Number n for Extraction.

All

All fingle cube Numbers, with their respective R are contained in the following Table.

Roots,	1	12	3	4 (	1 5	16	17	8
Roots, Cubes,	1	18	27	64	125	216	1 343	512

over Unity, and so successively over every third Figure wards the Left-hand in Integers, missing two between Point; but in Decimals you must point from the Fig. Units to the Right-hand, &c.

Example.

Extract the Cube Root of 46656, prepared thui, and directed.

46656

Here are but two Points, therefore the Root will have two Places.

adly, The Number being prepared, seek in the foing Table the nearest Root to the first Point or Period which you will find to be 3, which place in the Que thus, 46656(3; the Cube whereof is 27, which place der your first Period 46, as in the Margin; 466 subtract it from 46, and there rests 46; this 27 is your first Work, and no more to be repeated. Then to the Remainder 19, bring down to the next Period, vis. 656, which is the last and place it on the Right of the Remainder 19.

46656 (3

er's to the

19656 Resolvend.

Then draw a Line under the Resolvend; next square placed in the Quotient, which makes 9, which mult by 300 makes 2700 for a Divisor, which place accordings:

46656 (3

balt o 2700) 19656 ma to tool at Dads Banto

Then feek how often 2 in 19? Answer, but 6 time cause of the Increase that will come from the Quand place 6 in the Quotient; then multiply the Divi

n proces

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multi ms 108 mallo or 16200,

2700

Then cub make it 23240; 166; whi there be disfinif This will 16, and

be 4665

The Young Man's best Companion. ad the Product will be 16200; which place orderly ve R the Refolvend thus 46656 136 19656 igure ween proceed to find the Increase coming from the Quothus: Square your last Figure 6, and it makes 36; multiplied by 3, the other Figure of the Quotient, 108; which multiplied by 30, makes 3240. This ralfo orderly under the last Number before fet down 16200, and the Work will appear thus a T perficies is the bide of the . be 46656 (36 Il hav a given Circle be 160, the he for 2700) 19656 e Qu 16200 h plac 3240 and griss street a fe war self .4 466 hen cube the Figure last placed in the Quotient, wis. 6, 27 make it 216; which place orderly likewise under the 1240; add the three Lines together, and they make 6; which is equal to the Resolvend above, viz. 19656, here being no more Periods to bring down, I fee the tisfinished, and find the cube Root of 46656 to be 36. his will appear to be true if the Root 36 be multiplied 6, and that Product by 36 again, for then the Refult 1246656 as in the following Operation. 36 *<u>fquare</u>* 36 h mul 216 ha ) to present eigh 108 1296 ards; and the Par 36 7776 ie Qu 3888 46656 Proof.

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## Some Uses of the Square and Cube Room

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1. To find a mean Proportional between two Number

Numbers is the mean Proportional fough the mean Proportional between 16 and 64, will be 32 16 multiplied by 64 produces 1024, and the Square is, also 1024. This is of Use in finding the Side Square equal to any Parallelogram, Rhombus, Rhombo Triangle, or Regular Polygon.

2. To find the Side of a Square equal to the Area of a

Rule. The square Root of the Content of any given perficies is the Side of the Square.—So if the Content a given Circle be 160, the Side of the Square equal be 12,649.

3. The Area of a Circle being given, to find the Gird rence. See Page 220.

See Page 220. Said of Least of See Page 220.

5. And two Sides of a Right-angled Triangle being g

This depends upon a mathematical Proposition, in it is proved, that the Square of the Hypothenus flongest Side of a Right-angled Triangle, is equal to Sum of the Squares of the Base and Perpendicular, the of the other two Sides.

See Figure 13.

Breadth of a Moat or Ditch, and the Perpendicula the Height of a Castle, Tower, or City-wan; and the pothenuse AC, the Length of a Scaling-ladder.

In this Figure, the Base AB is supposed to conta Yards; and the Perpendicular, or Height of the Tow Wall, 30 Yards; What Length will the Hypothenus or the Scaling-ladder be?

Rule. The square Root of the Sum of the Square the Base and Perpendicular, is the Length of the Hy nule. See the Work.

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were required; then the Square Root of the Difte of the Squares of the Hypothenuse and Perpendiis the Length of the Base, or Breadth of the Ditch or See the Work.

2500 the Square of the Hypothenuse A. C. 900 the Square of the Perpend. B. C.

Differ. 1600 (40 Yards the Root or Breadth of the

Example 2. There are two fimilar (6) is Areas are as q to ar, and the Side of the letter

If the Height of the Tower or Perpendicular receiver required; then the square Root of the Difference squares of the Hypothenuse and Base, is the Height Perpendicular BC.

my Number of Men being given to be formed into a Battalia, to find the Number of Rank and File.

The square Root of the Number of Men given, will Number of Men to be placed in Rank and File.

dinto a square Battalia; the square Root of 32400 thound to be 180, and so many Men must be placed th, and also in File.

I find the Side of a Square, Polygon, or the Diameter only, which shall be, to any other given Square, find-

Since like Surfaces are to each other, in a Dupli-

The Young Man's best Campanion. 240 As the given Circle, Square, or Polygon, Is to the required Circle, Square or Polygon; So is the Square of the Diameter or Side of the fir To the Square of the Diameter or Side of the Second Then the fquare Root of the Refult of the above Pi tion will be the Diameter or Side required. Example 1. There is a Circle whose Diameter

what will the Diameter of that Circle be, whole A

Here 11 times 11 is 121; and

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Example 2. There are two fimilar Polygons Areas are as q to 25, and the Side of the leffer is 12 what is the Side of the greater? Here 12 times 12 tie required; then the lignare Rope of the Differ bins

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The figure 1 cot of 600 (9) 3600 to 100 de sent of T.

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Pemendicular BC.

ionala od hum naum cama orteta. 000.

8. The Uses of the Cube Root are to find out the hons of like Solids, as Globes, Cylinders, Cubes, &c.

Rule. Since like Solids are to each other, as the of their like Sides or Diameters; therefore, As the Content or Weight of a given Solid, To the Content or Weight of another like Sold

The Koung Man's bell Co inthe Cube of the Side or Dinmister of the one or bas the Cube of the Side or Diameter of the others bis he the Cube Root of the Refult will be the Length of Side or Diameter required and Suppose a Ship to be tog Fert by the Keek and toll by the Beam, what is the Design of her Main-nell Bullet that weighs 72 16. is 8 Inches in Diameter : will be the Diameter of that Bullet that weight o lb. Here the Cube of 8 is c12; and As 72-0en two thirds of the Keel 16) 860 site Freactin of the ban. bofwer, the Lengag of her wain-mail is the feet in the Work. 288 then the Cube Root of 64, wire 14 is the Diameter rethe Beam, what is the Length of he Example 2. 8 a Ship of a 100 Tuns be 44 Foot long at the Keel, of Length must the Keel of a Ship be that carries 220 My, as 100 is to 220: fo is the Cube of 44, viz. 85184. 187404,8; whose Cube Root is 77,226 the Length of Leel forest a of the sagued sal Example 3. There is a cubical Vessel whose Side is 12 Inches, and required to find the Side of a Veffel that holds three as much. Here the Cube of 12 is 1728, which diplied by-5184011 Cube Root of which is 17,386 the Answer required, dide fought. or the mail is stigned bill taly Rule to find the Length of the Masts of a Ship, viz. wothirds the Length of the Keel, and the Breadth the Beam, is the Length of the Main-matt; and the is therefore, to multiply the Length of the Keel by a,

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The Young Mon's best Companion. and to divide the Product by 37 and thee to the Om add the Breadth of the Beam, and the Tom whether of the Cobe Root of the Refult will BameniaM silve de of Diameter requisitions Suppose a Ship to be 108 Feet by the Keel, and 40 by the Beam, what is the Length of her Main-man! Bullet that weight 72 18. isoffnehes in Diameter : will be the Diameter of that Bullet that weight o B. ere the Cube of S is 512; and 3) 216 p-sc 2A 72 two thirds of the Keel Add 30 840 the Breadth of the Beam. SATE Answer, The Length of her Main mast is 112 Feet in the Work. 288 Again. Admira Ship to be 84 Feet by the Keel, and it Feet the Beam, what is the Length of her Main-maft? 84 per Keel. Ship of a 100 Tunt be at Fortong at the Keel, of Leagth must the Keel of a Shire be that carries 200 3) 168 as 100 is to 220: fo is the Cabe of at, wir. 85184. to digna Add & Sotwo-thirds of the Keek to 31 the Breadth of the Beam, Anfwer, 87 Feet, the Length of the Main-n and to had the bedevot a Verter toot to de Another Way to find the Length and Thickness of Masts Yards, viz. The Way to find the Length of the Main-maft, is to the Breadth of the Beam, and the Depth of the Hole Feet together, and divide the Total by 1,5, and the tient will be the Length of the Main-mast in Mards Example.

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Admit a Ship whose Keel in Length is 73 Feet, and Breadth of the Beam 28,5 Feet, and the Depth of the #2 Feet; what is the Length of the Main-maft? ש ווורוב סוב, זס הקשוחון

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Construction of some useful Geometrical Problems.

Minner; and return of

to creet a Perpendicular. See Figure the 14th.

trefted on it from the Point B; with the Compasses at a convenient Distance) place one Foot at the B, and with the other make the two Marks E and F, then, having the same, or any other M 2

more convenient Distance in the Compasses, set one on E. and with the other describe the Arc G G; when describe the Arc G G; when done, without altering the Distance last use one Foot at F, and with the other describe the Arc crossing the former at the Point A; through which I section with a Ruler draw a Line from A. to B, which be perpendicular to the Line C D.

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2. How to raise a Perpendicular at or near the En

This is effected several Ways; but I shall instance two, which are very easy. See Figure 15.

## Fir f Merbod and L. on ban

suppose the Line AB be given to raise a Perpend near the End, A.

First, open your Compasses to any convenient Distand set one Foot on the Point A; and with the other feribe the Arc F E D; then, with one Foot of the passes in D, (they retaining the same Distance) cross the in E; and then setting one Foot in E, with the other the Arc AFG, crossing the first Arc in F. Again, a Foot in F, and with the other describe the small Arc crossing the former in the Point C; so the Line AC drawn, will be the Perpendicular required.

#### The Second Method.

Admit B be the Point given on which to draw the pendicular B I. Open the Compasses to any composition of the Point B, pitch the other Foot at Random, as suppose at K; then the resting in K, turn the other about till it cross the Lin in L; then draw the Line KL, and continue the say yond K, setting off the same Distance KL (at who Compasses already stand) from K to M; so a Line from B, through M, will be the Perpendicular rest

3. How so divide a Right Line into two equal Parts

Suppose the Line A B be given to be divided in equal Parts. Take in the Compasses any Diffance

the Length of A B, and setting one Foot on the Point with the other draw the Arc F D E; then (with the spaffes unaltered) set one Foot in B, and with the cross the former Arc both above and below the Line, is Points F and G; then a Line drawn from F to G intersect, or cut the given Line in H, and divide the A B into equal Parts, A H and H B.

Une being given, bow to draw another Line parallel brownto, at any Distance required, or through any Point offend.

Of parallel Lines there are two Sorts, viz. Straight or or lefter one than the other, are faid to be Parallel Concentric, that is, having one common Centre. See me the 17th.

whis Figure, the Circle ABCD is concentric or palito the Circle BFG H, because both of them are drawn in the same Centre. The Line AC is the Diameter of speater Circle, and the Line EG of the lesser Circle. In I Right Lines drawn from the Centre to either of the number of the circle, are equal with respect to their Periphery; such Lines are called half Diameters, and sometimes Radius of the Circle, and will divide the Circle into pul Parts, each containing 60 Degrees, and the whole the 300; into which all the great Circles of the Sphere improsed to be divided.

### Of Parallel Right Lines.

light-lined Parallels, are Lines drawn on a Plane of equal gh and Distance; and the infinitely extended, will nemeet, and in all Parts retain an equal Distance, such as a underneath.

B C D

how a Right Line parallel to another Right Line at a Distance given. See Figure the 18th.

Take in your Compasses the given Distance G H; then may one Foot in E, draw the Arc I K; then moving to describe the Arc L M; then laying a Ruler on the Top

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5. Through any three Points (not in a fraight Line),
feribe a Circle. See Figure the 19th

Let the three Points given be A, B, and C, through wit is required that a Circle be drawn. First, set one Fo the Compasses in one of the given Points, as suppose in and extend the other Foot to B, another of the Points, draw the Arc of a Circle G FD; then (the Compasses altered) set one Foot in B, and with the other cross the Arc with two small Arcs, in the Points D and E; draw the Line D E. Thirdly, set one Foot in C, (the C passes being at the same Distance) and with the other cross the first Arc G F D in the Points F and G, and of the Line F G, crossing the Line D E in the Point O, w is the Centre sought for; in which, place one Foot of Compasses, and describe the Circle at the Distance O A, it will pass through all the given Points, A, B, and C

How to make Line of Chords Geomatrically to any off Length or Radius.

Since in the Art of Dialling, there is frequent Use of the Line of Chords, it is proper here to shew the

ing thereof.

A Line of Chords is 90 Degrees of the Arc of a Ci transferred from the Limb of the Circle to a straight I now every Circle, whether Great or Small, is divided supposed so to be) into 360 equal Parts, called Degrees of the Semi or half Circle contains 180, the Quadra Quarter 90, and the Radius or Semi-diameter (which is Line with which the Circle or Semi-circle is drawn or scribed) is always equal to 60 Degrees of that Circle with describes, and therefore 60 Degrees of a Line of Ch is called the Radius thereof.

To make the Line of Chords: as in Figure the 20th.

First draw a Line of any Length, as CBD, and on Middle thereof erect the Perpendicular AB; next of your Compasses to the Radius or Length that you would your Line of Chords be of; which admit AB, and with Distance on B as the Centre, describe or draw the S

Line) t e Pain ough w one Fo ppose i Points, mpaffes ross the and E; , (the C other. and o nt O, w Foot of ce OA and C

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de Cad Bo which is divided into two equal Parts or Quaintroly, the Perpendicular Line AB, thirdly, divide the on Quadrant A.D. into gobequal Parts of Degrees: hich is done by taking the Longth of the Line AB, and ing that Diltance on the Quadrant AD, and from D to A Bio Rico Degrees, and A Rigo Degrees; then take Diffance A R, and fet it from D to S, fo is the Quadrant and into three equal Parts, at the Point S and R, each maining 30 Degrees: This done, divide the feveral Spaces eween AR, RS, and S D, into three equal Parts, reach of hich will be 10 Degrees according as the Numbers are feen n fet apart to them : And these again divided into two parts, each Part contains Degrees; and every of beinto five smaller, as in the Representation; and so whole Quadrant is divided into go Degrees. Fourthly Quadrant ARSD being thus divided into go Degrees, and describe the Arc AEF, touching the Line CD in to sthe Point F. upon the Right Line CD, the Chord 100 Degrees. Fifthly, Open the Compasses from D to Degrees, and describe the Arc 80 GH; so thall the if H be the Chord of 80 Degrees, Sixthly, Open the compasses from D to 70, describe the Arc 70 1K, so is K Chord of 70 Degrees. Again, Open the Compasses on D to R, the Radius of 60 Degrees, and deferibe the RLB, fo is B the Chord of 60 Degrees, equal to the dius. Do the fame by 50, 40, 30, 20, and 10, and then will have the Line DF divided into 90 unequal Parts, and Chords, as in Figure 205 . a car

Thus much for the Line of Chords frequently made use in Dialling, where there is not the Conveniency of have a mathematical Instrument, maker near at hand.

Note, A Degree is the 360th Part of the Globe, or of any inde; each of awhich Degrees is supposed to be divided into Parts, called Minutes: so that 45 Minutes is three corters of a Degree, and 30 Minutes half a Degree, and Minutes one Quarter of a Degree.

## Instrumental Arithmetick.

As Problems or Questions in Measurement, & are solved or answered Arithmetically by the Pen, so are also instrumentally taken by Compasses from certain M. 4 Lines,

Lines, &c., or Rules made for that Purpose, for the Hel those that are deficient in Arithmetic, or for a quie Dispatch of Business; and such Performances are called firumental Arithmetic; and of these Instruments, the n in Vogue or Use, are these thren: a. the Carpenter's P. Rule. 2. Gunter's Line. 3. Caggestal's sliding Rule.

1 . The Carpenter's Plain Rules

Plain Rule, in relation to its Uses, &c.

let apart to them? And thele are in a viced into two

#### to grave bon a anglts Description

First Rule is made use of in measuring Board and Timbering two Feet in Length, and divided into twenty-sour Parts or Inches subdivision of these Parts or Inches subdivision of these Halwes into Quarters, such Quarter into two Parts; so that every Inch is division of eight Parts, and the whole Length into 192 Parts.

This Rule is well known, and therefore not absolutely

This Rule is well known, and therefore not abbility seffary of Representation; but bowever, for the besser we founding it, I shall give one, thus:

This Line begins at 6, and goes on to 36, within 4 ches of the Rule on the Right hand.

Its Ufe.

In. deep. Feet. In. Pts.

12 0 0
2 6 0 0
3 4 0 0
in Lengthm
3 0 0
2 4 9
6 2 0 0

By this Table it is manifest, and easily understood, I a Board of 4 Inches requires 3 Foot in Length to makes in

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ure, and a Piece of 3 Inches broad, wil require 4 Foot length to make a Foot square, &c. At the other end of this Rule is a Table called Under who Meafure ; and thus described,

1	2	3	4	5	6	17	8	1-
41	36	16	0	0.5	1-4	1 2	2	1
01	0	0	0	9	10	111	3	

This Line begins at 8 and half, and goes on (by Divios to 36.

In. S	quare.	1 10 1	Foot.		
	1	STORT.	144,		
	2		36,	0	
Marine !	3		16,	0	
Piece of	4	727		0	In Length make a folid Foot.
Timber of	5		5,	9	folid Foot.
	6	THE PARTY		0	011
1	7	100	, 2,	11	7 3 11 2
	18	1 3 4	2,	3-	

by this Table 'tis plain, That if a Piece of Timber is 6 the square, then 4 Foot in Length of that Piece will ake a folid Foot.

it is a common Method with Carpenters to add the much and Thickness of a Piece of Timber in Inches to-ther, and call the half thereof the Side of the Square of It Piece; but this Method gives the Content more than is; and the greater the Difference, the larger the Error. the true Square may be found in Gunter's Line, thus: ace one Point of the Compasses upon the Line at the lickness, and the other at the Breadth; then half of that ment, will reach from either the Breadth, or Thickness the Side of the true Square in Inches.

#### Gunter's Line.

This Line is commonly fet on the Carpenter's plain Rule, confilts of two Lines number'd 1, 2, 3, &c. one let the End of the other, and it is somewhat of the followg form:

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	To prove the Line by the Compasses, obser that the
22	Distance { 1 to 2   is equal to 2 to 4 } 5 to 10   the Distance   4 to 8   from   3 to 6 }
E LA	To number on the Gunter's Line.
4 5	Observe, that the Figures 7, 2, 3, 4, 5, 6, 8, 9, sometimes signify themselves simply or lone; at other times, 10, 20, 30,40, &c. Aga at other times, 100, 200, 300, or 1000, &c.
67871 2	For the Figure 1, account 1 on the Line; a for 3, take 3 of the large Divisions; and for take 4 of the smaller Divisions; and that is to Point. Again, to find 750 on the Line; For take 7 on the Line, for 50 take 5 of the grid Divisions, and that is the Point.
	To find a small Number on the Line; as fu
N	For 10, take 1 as before, and for 2 take
456	of the large Divisions, and that is the Point In measuring Board or Timber, it is best have a Line of 2 Foot long, and Compass I Foot long.
887	Note, Let the Measurement be by the Ind Foot, Yard, Pole, Rod, &c. it is best to bave

Decimally divided, or fo supposed, that is, it 10th Parts .-Note also, That if one Point of the Compasses reach beyo the Line in the Work, remove the other Point to the fame !

gure or Place on the other Line.

## Multiplication by Gunter's Line.

To multiply 5 by 7, fet one Foot of the Compasses of in the Left-hand Line, and extend the other to 5 upware or towards the Right-hand, and with the fame Extent pla one Foot in 7, and the other Foot will fall on 35 in Right-hand Line, which is the Answer.

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Example 1. Divide 63 by a extend from 3 to 1 downsands, or soward the Left hand, and the Extent will reach be same Way from 63 to 21 the Quotient:

N. B. In multiplying you must always extend upwards, that is from 1, to 2, 3, 4, &c. and, on the contrary, in di-

Example z. Divide 288 /. equally among 16 Men . Example z. Divide 288 /. equally among 16 Men . Example z. mid from 16 to 1 downwards and that Extent will reach drame Way, from 288 /200 18 /. for each Man.

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Example 3. Suppose 750 d. were to be divided among 5 Men: Extend from 25 to a downwards; and that Example will reach the same Way, from 750 to 30 deach Man's same.

### Rule of Three Direa.

Example 1. If 5 Bushels of Barley cost 11 Shillings, what will 40 Bushels cost? Extend from 5 to 11, upwards; and that Extent will reach, the same Way, from 40 to 88, the Shillings required.

Example 2. If 3 Ells of Holland cost 10 1. 6 d. what, will 40 Ells cost? Extend from 3 to 10 upwards; and that Extent, the same Way, will reach from 40 to 140 d. the Answer.

#### The Use in Board Measure, ......

Example. If a Board be 9 Inches broad, and to Foot log, what is the Content in superficial square Feet? Extend from 12, (the Centre of Foot Measure to 6 downwards, and that Extent the same Way will reach from 19 to 14 and 1.

#### In Timber Measure.

Reample. A Piece of Timber 24 Inches fquare, and & loot long, what is the Content in folid Feet? Extend from the Centre, to 24 upwards, and that Extent twice the me Way will reach from 8 to 32 Foot the Content?

#### Brick-Work.

How many Rods of Work are there in 4085 Feet? Exunded from 272 downwards to 2, and that Extent the same Way from 4085, will reach to 15 Rods the Answer.

## 3. Coggefhall's Sliding Rule.

The next Instrument I shall speak of, is that which go by the Name of Coggesball's Stiding Rule. And first of

### Its Description.

This Rule is framed 3 Ways; fliding by one another the Glasser's Rule; Sliding on one Side of a two Foo Joint-Rule; and one Part sliding on the other, in a Foo of Length; the back Part being flat, on which are fund

Lines and Scales.

Upon the aforesaid Sliding-side of the Rule, are so Lines of Numbers, three are double Lines, and one a sing Line of Numbers marked with ABC and D, the three marked AB and C, are called double Lines of Number and sigured 1, 2, 3, 4, 5, 6, 7, 8, 9. Then 1, 2, 3, 4, 6, 7, 8, 9, and 10, at the End. That marked D, is the single Line of Numbers, and sigured 4, 5, 6, 7, 8, 9, 10, 20, 30, and at the End 40, even with and under 10, the double Line next to it; and that is called the Gir Line, and so marked in the Figure.

The Figures on the three double Lines of Number may be increased or decreased at pleasure; thus 1 at the Beginning may be called 10, 100, or 1000; the 2 is 2 200, or 2000; fo that when 1 at the Beginning is 10, the 1 in the Middle is 100, and 10 at the End is 1000; but 1 at the Beginning is counted for 1, then 1 in the Middle

is 10, and 10 at the End is 100.

And as the Figures are altered, so must the Strokes of Divisions between them be altered in their Value, according to the Number of the Parts they are divided into; thus, from 1 to 2, it is divided into 10 Parts; and each Tenth is divided into 5 Parts; and from 2 to 3, it is divided into 10 Parts, and each Tenth into 2 Parts, and on from 3 to 5; then from 5 to 6 it is divided into 10 Parts only; and so on unto 1 in the Middle of the Rule, or the Bad of the first Part of the double Line of Numbers. The second Part of the double Line is divided like the first.

The Girt-line marked D, is divided from 4 to 5 into Parts, and each Tenth into 2 Parts, and so on from 5 to 20, it is divided into 10 Parts and each Tenth into 4 Parts; and so on all the Way from

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and the Back-fide of the sliding Piece is divided into the, Halves, Quarters, and Half-quarters, and figured in 12 to 24, so that it may be slid out to 2 Foot, to after the Length of a Tree, or any thing else you have before to measure.

#### The Use of the double Scale.

#### Example.

Suppose there is a Geometrical Square, whose Sides are set  $\frac{1}{2}$  each: Set one Foot on the Line B. to  $3\frac{1}{2}$  on the is A; and then against  $3\frac{1}{2}$  on the Line B, is 12 Foot  $\frac{1}{2}$  the Line A, which is the Content of such a Square.

Suppose the Side of a Rhombus be 8 Foot 6 Inches  $\frac{2}{4}$ , what is the Contine AB, 8 F,  $4\frac{1}{2}$ , what is the Contine Bet one Foot on the Line B, to 8 Feet  $\frac{1}{100}$  on the line B, is 71 Feet Parts of a Foot on the Line A, and to know the line of the Decimal, or Part of the Foot, look for  $\frac{1}{100}$  on kale, and you will find against it 4 Inches  $\frac{1}{4}$ ; so that Content of this Rhombus is 71 Foot, 4 Inches  $\frac{1}{4}$ . Again, Suppose the Length of a Rhomboides to be 17 F. 17  $\frac{25}{100}$ , and the Breadth 8 F. 7 or  $8\frac{1}{100}$ , what is the Content.

Content? Set I Foot on the Line B, to 17,25 on the A, then against 8,58 on the Line B, is 148 Feet on the The rigure hath been presented before, and open Arithmetically, therefore it is here unnecessary,

Let the Bale of a Triangle be 4 Feet 1 Inch 3, and Perpendicular 2 Feet 13: The half of the one, is 2 ? Parts; and of the other, 1 Foot 7 Parts. Set one on to 4.15 on the Line A; then againft 1,07 half Perpendicular on the Line B, is 4 Feet and almost Foot for the Content. On if you fet t on the Line B 1,07 on the Line A, against 4,15 on the Line B, is 4, almost a Foot on the Line A.

Again, another Way. If you let one on the Line 4, f on the Line A, then against 2, 15 on the Line B Foot 19 (which is about 11 Inches) on the Line A, half whereof is & Feet 5 Inches 2, which is the Cont

of the Triangle.

#### GEOGRAPHY.

Bography is the Art of describing the Figure, May Ttude, and Position, of the Surface of the Earth, Seas, and their Parts.

Many and fufficient Arguments may be produced prove that the Earth and Seas are of a spherical or globe Figure, one of them may be sufficient in this Place, that Ships, in failing from High Capes or Head-lands, Sight of their lower Parts first; and continue gradually lole Sight of thole, which are fituate higher and high till at last the Top vanishes; which could not be, un the Surface of the Sea were convex; now this Conve of the Sea is found to be uniform in all Parts there therefore the Surface of the Waters is spherical; which ing granted, that of the Land must be nearly so, because Extremity fets Limits to the Waters.

The whole Body of the Earth and Sea is therefore ca

the terraqueous Globe. Since, as has been before observed, all Circles are wided into 360 Degrees, therefore any great Circle rounding the terraqueous Globe, is usually so divide Our ingenious Countryman, Mr. Richard Norwood, and the Year 1635, by an accurate Measurement of the tance between London and York, found that a Degree great Circle was about 691 Statute-Miles in Length,

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the was 25,020 Miles; whence its Diameter will be

The Sea covers the greater Part of the terraqueous tobe, out of which the Land rifes with very flow Afaits, the Height of the loftiest Mountains thereof being only the four-thousandth Part of the above found Diamer, which is but just sufficient to give the Rivers a flow leafy descent.

Geographers have found it necessary to imagine certain feles to be drawn on the Surface of the Earth; for the enter Determination of the Positions of Places there.

These are either greater or lesser Circles; great Circles into the Globe into two equal Parts, the lesser Circles inde it into two unequal Parts.

There are fix kinds of great Circles; two of them, the Equator or Equinoctial and the Ecliptic are fixed; the others, viz. the Meridians, the Circles of Longide, the Horizons, and the vertical Circles are vable, according to the Part of the Globe they are appropried to.

There are two Points on the Surface of the terraqueous lobe, called the Poles of the Earth, which are diametrially opposite to each other; the one is called the North at the other the South Pole.

The Equator is that great Circle which is equally difm from both the above-mentioned Poles, and is fo called
on its dividing the terraqueous Globe into two equal
and; named, from the Poles which are fituated in each,
a northern and fouthern Hemispheres: it is also called
quinoctial, because, when the Sun enters it, the Days and
lights are of equal Length in all Parts of the Globe: Seam commonly call this Circle the Line.

Meridians, or Circles of terrestrial Longitude, are supsed to be drawn perpendicular to the Equator, and to the through the Poles; they are called Meridians or Midby Circles, because when the Sun comes to the Meridian any Place, it is Noon or Mid-day at that Place. Hence every particular Place on the Surface of the terqueous Globe hath its proper Meridian, and consequent

species Globe hath its proper Meridian, and confequent-Traveller who doth not directly approach to or re-

cede

cede from one of the Poles is continually changing

With respect to the two Circles above described, e

and Longitude. . . . said bon Lang shaw to see

The Latitude of any Place upon Earth is its Different the Equator, in a direct Line towards one of Poles; and fince the Meridians proceed in fush di Lines, therefore Latitude is reckoned in Degrees and P

of Degrees, on the Meridian of the Place.

The Longitude of any Place upon Earth is the East West Distance of the Meridian of that Place, from so fixed Meridian, at which Longitude is supposed to beg Now, since all the Meridians pass through the Poles, t coincide with one another at those Points, and the greatest Distance from each other will be, when they farthest from those Points of Coincidence, viz. at the Equator, therefore Longitude is reckoned in Degrees and Page of a Degree on the Equator.

Geographers have differed very much in the Merid from whence they have affumed the Beginning of Lor tude; the Antients chose the Meridian of the Canar which they called the Fortunate Islands; others have pit ed on the Islands Azores or the Western Islands; but most usual way is, now, to reckon Longitude, from Capital of that Country in which an Author writes; a accordingly the Longitude is hereafter reckoned from

Meridian of London brown a soin put thed and

Parallels of Latitude are small Circles drawn parallel the Equator at any affigned Distance therefrom; therefovery particular Place on the Surface of the terraque Globe hath its proper Parallel of Latitude.

There are four of these Parallels of Latitude that are p ticularly remarkable, wiz. the two Tropicks and the t Polar Circles; but for the better Explanation of their P perties, it will be necessary, first, to define the Ecliptic.

The Ecliptic is that great Circle in which the Sun fee to perform its annual Motion round the Earth; this Cirmakes an Angle with the Equator of 23° 20': It interfer in two opposite Points, called the Equinoctial Points; a those two Points in the Ecliptic which are farthest from Equinoctial Points are called the Solftinal Points.

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Tropic of Cancer is a Parallel of Latitude 23° 26' Int from the Equator in the Northern Hemisphere, parthrough the northern Solftitial Point of the Ecliptic medicribed: And,

The Tropic of Capricorn is a Parallel of Latitude, as far that in the fouthern Hemisphere, passing through the them Solstitial Point.

The Arctic Polar Circle is a Parallel of Latitude 23° 29' Int from the north Pole; and the Antarctic Polar Circle Parallel of Latitude, as far diffant from the fouth

The Tropics and Polar Circles divide the Globe into a Parts called Zones, that is to fay Girdles or Belts; sof them, is called, the Torrid; two, Temperate; and, a Prigid.

The torrid Zone, so called from the great Heat of the in (which is vertical, or puffes directly over the Heads the Inhabitants twice in a Year) is fituated between the in Tropics, and is therefore about 47 Degrees in Breadth; with abitants are called Amphiscians, that is, such as have in Shadows cast both ways; the Sun being seen at Noon untimes to the North, and at other times to the South shadows.

The northern Temperate Zone is fituated between the impic of Cancer and the Arctic Polar Circle; and the intern Temperate Zone, between the Tropic of Caprimand the Antarctic Polar Circle: they are each of them that 43 Degrees broad: the Inhabitants are called Herrisian, that is, such as have their Shadow but one way; tat Noon the Shadow of the Inhabitants of the northern imperate Zone, are always cast northward; and those of the Inhabitants of the Southern, southward.

The Frigid Zones contain all that Space between the blat Circles and the Poles themselves; the northern Frigizone, being surrounded by the Arctic Circle, and the blaten, by the Antarctic: the Inhabitants are called Persian, because (when the Sun is on the same Side of the lautor as those Inhabitants are) their Shadows are (in lessace of 24 Hours) cast of all Sides, or quite round them. The Sun does not set in the Places within these lasts, during several successive Revolutions or Days in the Summer; and in the Winter he doth not rise in a like Space of time: At the Poles themselves the

Sun

The Young Man's heft Companion? 258 Sun is visible for half of the Year, and invisible for other had Equator in the h orthern Lientialed eratto If any Place on the Globe (except the Poles and E tor) be particularly confidered, there will be there Places on the fame Meridian, which have more in distely a Relation thereto, wist I a That Place which the fame Latitude on the other Side of the Rollatori Inhabitants of this Place are called Antari or much they have Mid-day and Midenight at the fame Timen those of the Place assumed but the Seafons sof the are different, the Summer of the one being the Winte he Propies and Polar Circles divide the Chatte has 201 That Place, which it on the fame Parallel of I tude, but is 180 Degrees different in Longitude it the habitants of this Place are called Perioci or Berioci they have Summer and Winter at the fame Times those of the Place assumed but the Times of the Du different, the Midday (of the one being the Mid high Tropics, and is therefore about 47 Degrees in 1840 adt 2. That Place which has the fame Latitude, on the Side of the Equator , and is a 80 Degrees different le 1 gitude this Place is diametrically offposite do the P affumed; its Inhabitants are called Antipodes, and it Seefons of the Year, as well as Times of the Day, are pic of Career and the Archic Polar CaptagaqQuivist The Horizon is that great Circle which dividented per or vibble Hemisphere of the World, framethe Lo or invitale; the Eye of the Spectator being divers in Centre of his Horizon selflence nevery sparticular Place the terraqueous Globe hather different Horizong and fequently a Traveller proceedings in any Direction is tinually changing his Horizon, mod and to sinstidedal The Circle is by Mariners divided into four Quar containing 90 Degrocalinishe four Points quattering Circle are called Cardinal Points and are named Buth North and South; the Entland West are those Points which the Sun rifes and fets when he is in the Equinoch and the North, and South Points are those which com with the Meridian of the Place, and are directed to the North and South Poles of the World Each Quarter of the Horizon is farther divided eight Points, which are very necessary, to the Googsp for the distinguishing the Limits of Countries i but Sun

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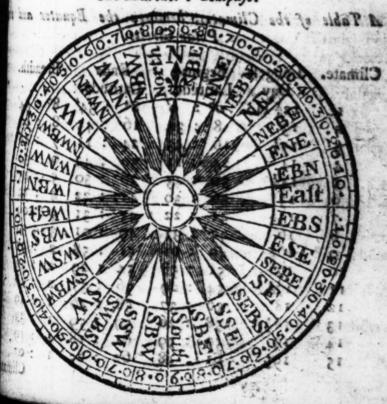
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of thefe Divisions is much more confiderable when Hed to the Mariner's Companyed to assist valuation and before the Invention of this excellent and most useful inment, it was usual in long Voyages to fail by or keep the Coaff, or at least to have it in fight as as in maniand plainly evident, by whe Voyages of Stro Phat B xx. 13. and xxvii. 2. which made their Voyages g, and very dangerous, by being to near the Shere. flow, by the Help of a Needle, touched by the Mag. or Loadstone, which by a wonderful and hidden Que rinclines its Point always Northerly, the ingenious Mais directed in his proper Course of failing, thro the Ocean, and unfathomable Depths, to his intended Port: dif the Wind is favourable, can fail near 333 Leagues, 1000 Miles in a Week, though in the darkeft Weather arkest Night, when neither Land, Moon, nor Stars, to be seen; which before, were the only Guide? and not feen, the Sailors were at great Lofs, and expoled to most imminent Danger.

Schold the Figure or Representation of the faid Compaigned the Cardinal and other Points as followeth:

The Mariner's Compass.



The above Compais is a Representation of the Herison a circular Piece of Paper called a Card, which Cobeing properly fixed to a Piece of Steel called the New and placed so as to turn freely round a Pin that supports will show the Position of the Metidian and other Poin and consequently, towards which of them the Ship sails

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es is div mofula's, Hills and Araits, Po Banks, M A Cont Tract of Empires, An Isla Ocean, Se Continent A Peni of Land tu joine An Ift joins a Pe A Mo ably high

Note, The Letters NBE, NNE, NEBN, &c. to be read North by East, North North East, North B by Narth, &c.

A Climate is a Space of the terraqueous Globe of tained between two such Parallels of Latitude, that Length of the longest Day in the one exceeds that in other by half an Hour.

There are fixty Climates, thirty to the North, and thi to the South of the Equator; twenty-four of each thi being fituate between the Equator and the Polar Circles differ in the Length of their longest Day by 24 Hou but in the remaining fix, between the Polar Circles a Poles, the Differences of the Lengths of the longest D are each a Month.

#### A Table of the Climater, between the Equator and Polar Circles.

Climate.	Longest	Begins		Breadth.	
	Day.	Latitude.	Latitude.	NEW TOWN	
Acres 1	121 Ho.	00: 0	80 : 34	80 0 34	
2	13	8 : 34	16 : 43	8:09	
3	137		8° : 34' 16 : 43 24 : 11	7 : 28	
4	14	24 : 11	30 : 45	6 : 34	
3 4 5 6 7 8	14± 15	30 : 45	36 : 30	5 45	
6	15	36 : 30	11 . 12	4 : 22	
2	154	41 : 22	45 : 31 49 : 01 51 : 58 54 : 29 56 : 37 58 : 26	4:09	
8	16	45 : 31	49 : 01	3 : 30	
9	161	49 : 01	51 : 58	2 : 57	
10	17	51 : 58 54 : 29 56 : 37	54 : 29	2 : 31	
11	173	54 : 29	56 : 37	2 : 08	
12	18	56 : 37	58 ; 26	1 : 49	
9 10 11 12 13	181	58 : 26	59:59	1 3 33	
14	19	59 : 59	61 : 18	1: 19	
15	191	61 : 18	62 : 25		

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Breadth.	À
16 y 200 Ho. 629 2 25 to 637 4: 188 1 99 : 156	the is
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Table of the Climates becauses the Polar Circles	and
tween two Shores, all R totampasted by the L.	ed be
mates. Longest Begins 1 919 Ends Breadth.	excep Wate
1 Month 660 : 21' 670 : 21' 00 21'	A
26 2 67 : 21 69 : 48 2 : 2	7
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20 at 351 (Aut 78 112 30 11 84 12 051) \$d 13	incle
10 6 84 : OS, 90 : OO 5 : 3	34
The terraqueous Globe or Globe of the Earth and	Wa-
m is divided, by Nature, into Continents, Islands,	Pe-
infula's, Isthmus's, Mountains, Promontories or C fills and Valleys; Oceans, Seas, Lakes, Gulphs or	apes,
this, Ports or Harbours, and Rivers; Rocks, She	elves,
A Continent, called fometimes the Main-land, is a	LU OI
hat of Land containing several contiguous Coun	tries.
mpires, Kingdoms, or States.	
An Island is a Piece of Land wholly surrounded bean, Sea, or other Water, and so divided from	
ontinent.	
A Peninsula (that is to say, almost an Island) is a Land encompassed by Water, except on one Side	Piece
is joined to the Continent or other Land.	THEIR
An Ishmus is that Neck or narrow Piece of Land	that
A Mountain is a Part of the Earth, which is con	fider-
by higher or more elevated than other Lands near it	7 316

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A Promontory is a Mountain, running out into the Sthe Extremity of which is called a Cape or Headland.

A Hill: is a leffer kind of Mountain, and a Valley that Land which is fituate at the Bottom of a Mountain Hill, on between two or more fuch.

The Ocean is a vaft Body of Salt Water, which fe rates forme of the Continents, and walkes their Borders Shorest

A Sea is a Branch of the Ocean flowing between for Parts of the Continents, or separating Islands from them.

A Lake is a Body of Waters every where farrounded

the Land.

A Oulph or Bay is a Part of the Ocean or Sea contained between two Shores, and is encompassed by the La except on one Side, where it communicates with the or Waters.

A Strait is a narrow Passage whereby Seas, Gulp and Bays communicate with the Ocean, or with one in ther.

A Port or Harbour is a Part of the Ocean or Sea inclosed by the Land, that Ships may ride in Safe therein.

A River is a running Water descending in a name Channel from the Mountains or other High-lands, a emptying itself into some Ocean, Sea, Lake, or oth River.

Rocks are great Stones; Shelves, and Banks, are Ennences confifting of Stones, Sands, or other Matter who obliruct the Passage of Ships at Sea, and often prove fato those who do not keep clear of them.

Marshes are Lands lying low, which are liable to overflowed by the Sea or Rivers, and Bogs are Mixtures Land and Water, over, or among which it is dangerous

attempt a Paffage.

The known Parts of the Earth are commonly dividinto four Parts, wiz. Europe, Afia, Africa, and Americathe first three were known to the Ancients, and are for the Reason called the Old World; the fourth was discover above 300 Years ago, and is therefore called the New World.

The Lands which lie toward the North and South Polare very little known; that toward the North Pole is call Terra Arctica, and that toward the South Pole Tirra Arctica, arctical

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Araits of the Dim Measure

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Cape Mall N. Long 171° 27' Miles.

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Conraphi or Numb The Young Man's bolt Companion. 263
so, or Terra Australis incognita; the latter is supby some, to be nearly as big at Europe, Asia, and
be Ocean assumes different Names, in different Parts
be Earth; and the Seas, Gulphs, and Bays, are named,
from the Lands to which they adjoin a triscthought
the most convenient in this short Sketch, to describe

eatted the Pap of Bifeay: On the North Hait by the remean Mountains, which beginns it is highly seems to the Bay of bifeay) reparate it from France Postage is no create W transfin adtabath in m State

more is bounded, not the North, by the northern or in Ocean; on the Westaby the North Allamic or the Ocean, which separates it from America; on the by the Mediterraneau Sea; separating it from Africa, on the East, by Asia, into which it joins, without mible Limit, toward the morthern Pares growth on the term, the River Tanais, the Pales Machine or Sea Labacche, the Straits of Confantingules the Sea of Maragra, the Straits of Confantingules the Sea of Maragra.

the Straits of Constantinople, the Sea of Marmara, built of the Dardanelli and the drebipologo, serve to the them.

Measures following; Conftantinople, the Capital of Measures following; Conftantinople, the Capital of Music in Latitude 4. 000 N. Longitude 28 58 E.) I from Cape St. Vincent, the South West Point of Lin Portugal, (fituate in Lat. 36° 41' N. Long. 8 12 N. 181, 48 E. being 17.70 Geographical Miles in therefrom.

In Mala, the fouthern Point of Turkey (in Lat. 37° N. Long. 24.07 E.) bears from the north Cape (in 171° 27' N. Long. 26 30 E.) S. 2, 15 W. Ditance Miles.

the contains the following Empires, Kingdoms, Reto or States, viz. Spain, Portugal, France, Italy,
h Great-Britain, the Netberlands, Germany, Hungary,
al, Denmark, Sweden, and Muscowy.

Number one fixth of the fame, thus 1700 Geographical module to 1700 and 283, or 1983 English Miles.

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Spain and Portugal are surrounded by the Sea on Sides: on the South and South East by the Mediterral which communicates with the western or Milannic Object the Straits of Cabraltar; on the West, by the Ocean; and, on the North; by the same of a Part side called the Bay of Biscay: On the North-Bast by the renean Mountains, which (reaching from the Medite mean to the Bay of Biscay) separate it from France.

Portugal is now a Kingdom, separate from Spain which it was heretofore subject; it is situate on the Och which washes it on the West and South; it has Califit the North; and abuts upon Been, Old Cassis, New rile, and Andalusia on the West; it is hardly 300 Mil Length from North to South, and about roo in Breathe Capital City is Listen, which is now in a rustone dition, having been almost totally destroyed by an Equake, and a Fire which succeeded it in Novembers the City of Oporto is also a Place of great Trade.

Most of the other Provinces of Spain were also for ly separate Kingdoms; such more Andalogia, and Gibraltar is situated, as are the Cities of Sewilli and dia; Graneda, within the Service, the Principal has the same Name; and on the Mediserraneau are situated Ports of Molaga, and Almeria; Murcia more cast in the Mediserraneau, in which, beside a City of the Name, is the City and Ports of Carebagenu. Vale North eastward of Murcia; this has a City and Sea of the same Name, and another Port of great Trade a Alicant.

In the Inland Parts are the Kingdoms of Old Con New Caffile, and Leon; and near the Confines of Frethole of Arragon and Navarre; the principal Chie Old Caffile are Burgos and Valadolid; of New Condition, the King's Residence, and Toledo; of Leon, manca and Leon; of Arragon, Saragossa; and of New Pampelona, and Estella.

The Kingdom of Galicia is fituate on the Ocean in North-West Part of Spain; its principal Cites are possess, and Corunna or the Groyne, which is a Section Principality of Assertes gives Title to the Kingdom of the Research of the Kingdom of the K

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the principal City is called Oviedo; the Province of full more eastward, lies on the Bay of that Name, that wo Ports of Consequence, Bilbea and St. Sebaf-

folly, The Principality of Catalonia is situate on the interantan, and is the most eastern Province of Spain; this is the City and Port of Barcelona, which is not four to any of the above-named. Not far from the are the Balearic Isles, called Mojorca, Minorca, and

Rocceding eastward along the Mediterranean Sea is the bedom of France, which is bounded on the East by Italy Germany, on the North by the Neibirlands and the life Channel, on the West by the Bay of Biscay, and to South by the Pyrennes, which separate it from Spain, a Part of the Mediterranean Sea.

france consists of twelve Provinces, the Southern are france consists of twelve Provinces, the Southern are fine and Gascony, whose chief Town is Bourdeaux; squedoc, whose Capital is Tholouse; Dauphine, whose nicipal City is Grenoble; and Province, whose Capital is h; this Province has two very considerable Sea-ports, ded Toulon, and Marseilles.

More northerly are the Provinces of Bretaigne, Or ear in, Bourgoigne, and Lionois; whose Capitals are Rennes, bilans, Dijon, and Lions; and still more northward, are brandy, the Isle of France, Campaigne, and Picara, those Chief Towns are Rouen, Paris, (the Capital of the Ingdom) Troyes, and Amiens.

Although the Provinces of France have not the superb likes of Kingdoms, as those of Spain have, yet some of hem are more extensive, rich, and populous, than some of the Kingdoms.

larged by the River on the West by the River and Part of the Alps; from Germany, on the No. 2, the same Mountains called the Aps; and is every haire secured by the Mediterranean S.a and the Gulph of linice, which is a Branch thereof.

This Country is divided into a great many Territories,

The Dukedom of Savoy, fituated partly among the Aps. Capital of which is Chamberry; and the Principality Pudment, whose Capital is Turin, are subject to the King

Capitals bear the same Names, are subject to the O of Hungary; the Duchy of Montferrat, whose Capit called Casal, and those of Parma and Modena, ha Capitals of the same Name, are governed by their Dukes; Venice, Genoa, Lucca, and St. Marino, are the pitals of sour Republics, called by those Names; I is governed by its Bishop; Rome and its Dependencies the Pope; the grand Duchy of Tuscany (the Capital which is Florence) is subject to the present Empero Germany; and Naples, the Capital of a Kingdom, sit at the southern Extremity, together with the Island of eity, from which it is divided by a narrow Strait, are sight to the same King. The chief City of Sicily is ca Palermo,

There are two other large Islands, Sardinia (whose pital is Cagliari) subject to its King, and Corfica (whose Capital is Bassia) subject to the Republic of Genoa; all simall one to the South of Sicily, called Malta, subject

the Knights of Malta.

More to the Eastward is Turky in Europe, which con of many Provinces; Constantinople, in the eastern Part the of, being the Residence of the Grand Seignior, the So reign of this Empire.

The Names of those Provinces and their Capital Ci

follow:

Provinces.
Dalmatia,
Bofnia,
Servia,
Tranfilwania,
Valachia,
Moldavia,
Bulgaria,
Crim Tartary,
Romania,
Grecia,

Chief Cities.
Spalatro,
Belgrade,
Semandria,
Hermanstat,
Tergowick,
Saccow,
Sopbia,
Precop.
Constantinople,
Saloniki.

To these must be added the Islands of the Archipela

which are very numerous.

Great Britain is a large Island, having divers le ones dependent on it: it confisted a few Years ago two distinct Kingdoms (under one Sovereign) called E

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and Scotland; and, as this Work is published in the mer of them, it is thought convenient to be more partir in the Description thereof, than we are with reduce other Countries; we shall therefore give the fol-

munt of the several Counties of England and Wales, with their Produce, Market-towns, and Market-tays, & a

in, m stands for Menday, tu for Tuesday, w for Wedneslay, th for Thursday, f for Friday, f for Saturday.

### Berkfbire )

Supposed to contain about, 527,000 Acres, is 120 Miles in Circumference, bath Plenty of Corn, Cattle, Wool, Wood, (especially Oak) and is accommodated with the Carriage, by the very fine Rivers of Thames and Ken-

#### And bath thefe Market Towns, vis.

Reading, the Shire-Town, Market day on Saturday.

Indico, m and f

Indico, f

ingerford, w Cakingham, to

#### Buckingbamfbire

han Inland County as well as Beriffires it contains about 11,000 Acres, is 138 Miles in Circumference, abounds in lon and Cattle, and is very confiderable for Wool. The meipal Rivers in this Shire are Tane, Ouze, and Colo.

#### Market Towns.

ackingham, f

lylelbury, f

ligh-Wickham, f

landw, f

l

Wendover, the
Amerinam, tu
Newport-pagnel, f
Colebrook, w
Rifborough, f
Invingho, f
Winflow, th

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Contains about 260,000 Acres, is 73 Miles in Circun rence, well stored with Corn and Cattle, and famous Fuller's Earth, &c.

Bedford, th and f

Dunstable, w

Wooburn f

Ampton Hill, th

Leighton, m

Market Traum.

Luton, m

Shefford, f

Bigglefwade, th

Potton, I

Tuddington. f

### Cambridgesbire

Is an Inland County, contains about 370,000 Acres 130 Miles in Circumference, and affords Plenty of Cattle, and Wild Fowl. Cambridge is the Shire Town, remarkable for a famous University, containing 12 (leges, and 4 Halls, all well endowed, and are as follow viz.

When COLLEGES.

1284 Peter House by Hugh de Batham, Bishop of 1346 Corpus Christi, by Henry of Monmouth, Duke or Bennet Lancaster.

1348 Gonvil and Caius to called from its several Founder by King Henry VI.

1448 Queen's by Margeret his Queen.

1497 Jesus by Margeret his Queen.

1506 St. John Salder by Margeret, Countels of Richmond By King Henry VIII.

1542 Magdalen by Edw. Stafford, D of Buckingh by King Henry VIII.

1584 Emanuel by King Henry VIII.

1584 Emanuel by King Henry VIII.

1598 Sidney Sussex by Frances Sidney, Countels of Halls.

1343 Clare by Rich Badw.

1347 Pembrook by Mary Countels of Pembrook 1353 Trinity by W. Bateman, Bp. of Norwic

1549 Catharine by Robert Wood, the Chancello

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Quantities Vain, and

Launceston Leskard, st Lestwithie Truro, w

ledmin, / Heliton, / Paditow, / Cachelford Grampoun

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#### Market Towns.

inbridge, f Merche, f Wifbych, lly, tu Inton, tu Royston, w Soham, f Market, 14 A Tablia / od an via mi si mod hoog Dag Art tisio 7222 ora

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Cheshire Dogs Band to spelle ha Maritime or Sea County, containing 720,000 Acres, is in Circumference about 118 Miles. Cheese and Salt nthe principal Commodities: For the first, no Place in World equals it; and for the latter, if there was but a Micient Quantity, there would be no occasion for Voyages the Isle of May.

#### Market Towns.

heler, w and fawore Frodiham, w in nowand Stackport, f Congleton, S Imptwich, Sandwich, th Aftringham, tu Viddlewich, Malpas, m Norwich, f heclesheld, m Knotsford, f

## Cornwall

is a Maritime County in the most Western Part of the lingdom, confishing of about 960,000 Acres, and is 150 like in Circumference. The chiefest Commodities are In and Copper, particularly the former it also affords wat Plenty of Wild Fowl, especially Woodcocks in the Mon: It likewise yields great Quantities of Samphire, lingo, fine Slate and Marble; above all the reft. walt mantities of Fish, which are yearly exported to France, an, and other foreign Countries. of said bas hallgan

## Market Towns, it atpos bas attor

Lunceston is the ch. Town, f Penryn, w, f, and f Likard, f Lefkard, Tregony, Lestwithiel, f St. Ives, w and f Truro, w and f Penzance, the distributed looming from Foway, f Foway, f St. German, f Helfton, Paditow, St. Columbe, thigh soll Chelford, f . brotobbill Falmouth, th \ , no ginis ampound, f .... Market-Jew, 16 house'l

Cumberland

Is also a Maritime County, bounded Northward Scotland, and Westward with the Irifb S. a; it contains a 1,040,000 Acres, and is in Circumference 168 Miles: a fruitful Country, affording good Pasture on the Hills, good Corn in Plenty in the Vallies: Fish and Wild F are very plentiful, and Coals in Abundance; likewife ! Mines of Lead and Copper, which are both very good their Kind.

Market Towns.

Carlifle is the Chief, f | Holm, f Cockermouth, tu Egermont, Whirehaven, the Kirke Ofwald, the Longtown, the Ravenglass, Penrith, tu Keswick, Brampton, tu w , manibor 11 Wigtown, William 

Is an Inland County, 130 Miles in Circumference, contains about 680,000 Acres, affords good Store of C and Wood, likewife confiderable Quantities of Free-it and Marble, Coal and Lead-Mines in Abundance; all yields Crystal and Alabaster.

Market Towns.

The County Town is Derby, f.

Chefterfield, f

Worksworth, tu

Bolsover, f

Fiddlewall, w ion: it incettie

Devensbire .

Is a Maritime County about 200 Miles in Circumfere and contains near 1,920,000 Acres; it hes on the Well England, and joins to Cornewall, having the Sea on North and South; it affords great Plenty of Corn, W. Fowl, and Eish, as also Lead-and Tin Mines; but the p cipal Manufactures are Kersies, Serges, and Lace.

Market Torons.

Exeter is the Capital w and / Tiverton, the but we could Barnstaple, f
Honiton, f
Oakhampton, f
Plimpton, f
Tavistock, f
Torrington, f
Torrington, f
Torrington, f
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Torrington, f
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Pareham,

Orf-caftle

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**Olchester** Town, arwich, / Wilden, S.

minster, / Miton, th brook, w. latrey, tu

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Cudee, Hatherleo, tu Moreton, Kingsbridge;

Dor fet bire

ha County exceeding pleafant and fruitful, and lies upon Channel, being 150 Miles in Circumference, and conabout 772,000 Aeres, yielding great Plenty of Corn? Inle. Wool, Fish, and Wild Fowl; and it also affords landance of Hemp, Free-stone, and Marble.

Market Towns.

schester is the County | Cranborn, w komb Regis, tu and f Cerne, w ol, mand tu-Fareham, Inf-castle, tu

Town, f Blandford, f ods and and amouth, tu and f Abbotfbury, the hibury, f Sherbourn, tu and f. Wimbourn, f Sturminfter, the

#### Durham

ha County Palatine, and lies very far in the North of Kingdom, the Air very cold, and the Ground not for inful as in the Southern Parcs: 'Tis 107 Miles in Circummee, and contains about 610,000 Acres; its chief Comedities are Coal, Iron, and Lead.

Market Towns.

lakland, 1h arlington, m

brham is the Principal, I Sunderland, Bernard's-castle, w

Effex Intelled

tha County bounded by the Sea, and lies in the Eastern mof England; is 146 Miles in Circumference, and con-1,240,000 Acres; the Soil yields Plenty of Corn. itle, and Wood: At Walden it affords great Store of Safn; and the best in the whole World, the Spanish being thing in comparison to it.

Market Towns.

Michester is the County Town, rwich, tu Milden, S.

Chelmsford, f Barking, / Hatfield, / Rumford, w

Wal-

Walden, / Epping, th and f collected Braintree, w Billericay, tu Brentwood, th Dunmore, Grayes, the

Halftead, f Linker, Hornden, f Raleigh / Manningtree, tu Waltham-Abbey, tu Troxtead, f Coggefhal, Sudbury,

### Gloucestersbire

Is a County exceeding fruitful and delightful; and, tak all together, one of the pleasantest Parts of the Kingdon It contains about 800,000 Acres, affords fome of the Cheese in the Nation, and Wool hardly inferior to Span It also abounds in Wood, Iron, Steel, and Salmon; but chiefest Manufacture is the Woollen, which is very en ordinary. Fal begge

Market Towns.

Gloucester, the County Town, Lechlade, tu w and Cirencester, m and f Tewksbury, f Blackley, wo out bar Durfley, the Mill cor all Tedbury, work at a late Cambden w 1 : Make Wickmore, m Newsham, f Stroud, f .basliabas8 Cheltenham, 16

Newent. f Sudbury, th Painfwick, ru viano Lingdom, the day, mobga N Thornbury, Whinchcomb, f Wotton, f

Hampfhire,

Or the County of Southampton, borders upon the Chann b ing a pleasant, healthful, and fruitful Country, about it Miles in Circumference, and contains about 1,312,5 Acres: It affords vast Plenty of Corn, Grass, Sheep, Wood, and particularly famous for Hogs and Honey, bo of which are most excellent in their Kind.

nied diesel phi . Market Towns. It ded edition !

Southampton, the County | Basingstoke, ap | Kinsclear, tu Town, the and Winchester, wand / Ringwood, w Portsmouth, th and f Odiam, f Andover, Limington, Alton,

Rumfey, / Alceston, 16 To thi ofiderab

Is a ver at yet ve very ret nit, cont Air, Oc.

Hertford Town, Albans irnet, m are, IN rkhamft kmanfy bufield,

Is an In o Miles ords Ple general

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ereford in Capital, empster,

Isa fma Contain general Cattle,

intingtor Ives, m mbolton

1 5/1 7 sa Sea Miles ! Romney ody Par best Ch

000

To this County belongs the Ifte of Wight, of a very miderable Extent, the principal Town Newport.

Hertfordbire

Is a very fine inclos'd County, the Land somewhat stony, nyet very fruitful, affording great Plenty of Corn, and very remarkable for good Malt; it is 130 Miles in Cirit, contains about 451,023 Acres, and hath an excellent ir, Oc.

Market Towns.

letford is the County- | Buntingford, m Baldock, th Town, Hitchin, to Albans. Hodfdon, th rnet, m Stevenage Augusta upon the Chainedwiczu rkhamstead, machine Watford, Miles in Circum, broling kmanfworthy food ad sheld, teb incheste paib stempfed the hadding bes Downs being the in offerefordfhire on oft goist sawoll

Is an Infand County, of a good Soil, and healthful Air, Miles in Circuit, and contains about 660,000 Acres: 16 ords Plenty of Wool; Wheat, Salmon, and Cyder, which egenerally effectived the best in the Kingdom. 3323 gaind

22 Door Market Towns 1022 9 1941 1996 2 10

reford is the the Weobly, the Penb, and to 2001 Capital, w, f, f Kyniton, will Ledbary, rent las empster, f Ross, 16 Bromyard and . 30

Huntingdonshire tontains about 240,000 Acres: It is an open Country. generally vely fertile and delightful, abounding in Corn Cattle, which are its chiefest Commodities, un e gaillat!

Market Towns keee, wand / intington the Chief, Jan St. Neots, White on Isbuilt A Ives, m Ramfey, w Horfbam. mbolton, f Yaxley, tu

Kent en the East by sa Sea County on the East Part of the Channel; it is Miles in Circumference, and contains about 1,248,000 ms being diffinguished into three Parts, viz. the Marshy, Rinney, Marth, Sec. the Downs, and the Middle or ody Part of It affords Plenty of Corn, good Pasture, and belt Chernies and Pippensi n the Kingdom,

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Canterbury famous for its Cathedral) is the Capital, w and f Rochester, f Maidstone, th Dover, w and / Sandwich, w and /

Romney, th

Market Towns. Smarden, f Hithe, Bromely, th Cranebrook, Jane Cray, w Dartford, / Eltham, m Feversham, w and / Folkstone, th

Lenham, is Sevenoak, Tenterden, f Malling. Milton, Tunbridge, f Westram. w Woolwich, f. Wrotham, tu Gravefend, wand Wye, th

, nobi Suffex

Is a Maritime County, lying upon the Channel between Kent and Hampfhire, containing 1,140,000 Acres, and 158 Miles in Circumference. The County is both fet and healthful, and is most exceeding pleasant sithe So Downs being the most delectable or delightful Part of whole Kingdom; and, as I know them, I alledge th to have the most scautiful Variety, and the pleasantest? food that can be in the whole Culture of Nature; the S being exceeding rich, occasioned by the numerous Flo of Sheep there kept; and therefore produce wonder Crops of Corn of all Sorts: It also hath the finell Wo and Rivers, and affords the best Game for Hunting, fi ing, and Fowling.

Chichefter is the chief, que | Midhurft, the c'es: It is an open O bons e Baft Grinftead, 16 Petworth, wo / History Haftings, w and Commo Rye, w and tuups Arundel, w and f and M. Horsham, f

Market Towns. Steyning, Wods anismo Hailcham, Bright-Helmfton, th Cuckfield, f

Lancashire

Is a Sea-coast County, bounded on the East by the Sea; 'tis 170 Miles in Circuit, and contains 1,130,000 Ac the Air is very wholesome, and the People generally to an advanced Age : The Soil is very good, and the Corn of all Sorts, particularly Oars, which are looked as the best in the Kingdom: It affords also Plenty of coal, and great Quantities of excellent Fifth of all se

County Michero, Liverpoo helton, a Wigan, n anchest Varring to

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eicester Town, Aby de l asworth, broroug illaton,

la ma a, and c Circuit : enty of C m, but th Wild-

incoln is t pital, f ofton, w antham, mford, a rialby, w inforon lingbrool

alding, i won tu the M ring the Market Towns.

Incaster is the County-Town, f Clinero, f Liverpool, f reston, w, f, and f

Wigan, m and

Varrington, w

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Ulverston, the Bolton, m Blackbourn, m Cartmel, m Coln, w Bury, th

Charnley, tu Dalton, / Leicestershire Roachdale, the Howstead, me Hostingdon, we Garistrong, the Kirkham, the Hornby, me Ormskirk, the Poulton, me

le a fine pleasant Inland County, 96 Miles in Circuit, mains about 560,000 Acres, abounds in Corn and good filure, and is very remarkable for Beans and Peas for firs, which thrive there the best of any County in English it is also eminent for large Speep, which produce fundance of Wool, and the longest in the Kingdom.

Market Towns.

thefter is the County-Town, m and f shby de la Zouch, f wworth, w suborough, tw sillaton, th

Hinkley, m
Lutterworth, th
Loughborough, th
Melton, tu
Mountforrel, m
Waltham, w and th

Lincolnsbire

Market Towns.

lea maritime County, part bordering on the German, a, and contains about 1,740,000 Acres, being 130 Miles Circuit: The western Parts are good and fruitful, having only of Grass, and breed the largest Oxen in the Kingm, but the eastern Parts are marshy, though well stored in Wild-fowl.

incoln is the Capital, f
infon, w and f
inford, m and f
inford, m and f
inford, w

dingbrook, the

Stanton, m
Binbrook, w
Alford, tu
Burton, m
Barton, m
Kirton, th
Bourn, f
Tatterfhall, f
Brugg th.

Womsfleet, f
Dunnington, f
Falkingham, th
Holbeck, th
Horncaftle, f
Louthe, w and f
Sleeford, m
Spillby, m

the Metropolis of the Kingdom, an Inland County, ing the Soil fertile by Improvement, and the Air sweet, and

and wholesome as any in the Kingdom; the Thames pa it from the County of Surry, and is on most Accounts finest River in the World.

Market Towns.

London, the Metropolis, hath ! Stains, Markets for every Day in Uxbridge, 16 Enfield, the Week. Westminster, m, w, and / Edgworth, th Brentford, th

## a fine pleasant I stidle dummon M of M les in Circuit,

Lies upon the Borders of Wales, was formerly reckon a Part of it, but is now numbered among the English Cou ties: It is accommodated by the famous River Severn, fecond in the Kingdom; and contains \$4,000 Acres, be 80 Miles in Circuit. This County is healthful, abound with Corn, Cattle, Salmon, and Trout.

Market Towns.

Monmouth, the principal, / Abergaveny, tu Newport, f

Caerleon, tu Chepflow, f

Pontipool, f Uike, m and f

## Norfolk

Is a large County, bordering on the Northern Coast, on the German Sea: 'tis 180 Miles in Circuit, and co tains 1,148,000 Acres. The Soil is different; in some Pla fertile, in others fandy, and in some deep and heavy. principal Commodities are Corn, Wool, Honey, and for Saffron: but chiefly Stuffs and Horrings, the first for Norwich, and the latter from Yarmouth. Sometimes and Amber are found on the Sea Coast.

Market Towns.

Norwich is the Dearham, f Capital, w, f, Walfingham, f and falles Lynn, tu and Walsham, w Windham, / Yarmouth, Thetford, fid. Ropeham, Snasham, f Attleborough th Alesham, Falkenham; th Ruckingham, Foultham, th Bornham, Hingham,

Caston, tu Comer, Downham, J Difs, fam, book Harleston, wow Herling, two room Holt of Honorga Wotton, w , and Worfted, Seby, every Sim Monday on 20

Northan

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Northam County Peterboto Brackley,

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Newcaltle Town. Berwick,

Is an tains \$60. Soil but i South Pa Plenty of ulashire.

Notting h Town, Newark, Redford, Mansfield

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haccounted one of the finest Inland Counties in the lingdom; is 120 Miles in Circuit, and contains about 10,000 Acres. The Air good, and the Soil rich; hath fetral fine Rivers, and abounds in Corn, Wood, and Cattle.

Market-Towns. Kettering, f Northampton, the Daventry, w Wellinborough, w Oundle, f County-Town, Trapstone, tu Towcester, / Peterbotough, Cliff, tu Rothwell, m Brackley, w

Northumberland

Is a Sea-County, bordering upon Scotland; in fome Part he Air is sharp, the Soil thin and barren; but towards the la it is tolerably fruitful. In this County are Abundance Lead and Coal Mines, and from hence come the Coals alled Sea-coals. Here are good Store of Wild-fowl, and Mh. particularly Salmon.

Market Towns.

Newcastle is the chief Morpeth, w ) 15 1 Town, f ... Sexbam, Mand And CATA Berwick, 1555 Trinity. - ut , Waller, tu - vinite lope.

Nottinghamfbire

Is an Inland County; in Circuit 110 Miles, and conhins 60,000 Acres: The Air is good and healthful, the soil but indifferent (a great Part being Forest Ground) the South Part pretty fruitful, the West woody, and yields Menty of Pit-coal. The River Trent divides it from Linwhite.

Market Towns.

Nottingham is the County-Town, av, f, and f Newark, w Redford, 20 Mansfield, th

Southwell, f Bingham, th Worksop, w Tuxford in the Clay, m

Is one of the most pleasant, healthful, and fertile Counis in the Kingdom: 'Tis watered with delightful Rivers, athe Thames, the beautiful Charrald, &c. but above all, his famous for having the finest University in the World, which confifts of 20 Colleges, endowed, and five Halls not endowed, viz.

Founded.

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New Magdalen Magdalen Market Towns in Oxfordbire.

New-Inn

Oxford, the Capi- | Henley, th Deddington, Watlington, S tal, w and Bicefler, f Whiteney, th Woodstock, tu Bampton, su Banbury, tu Chipping Norton, | Tame, to Burford,

Charlbury, Rutien

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Taunton, Wincanto

Watchet,

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Rutland

Is a small Inland County, 40 Miles in Circumference, maining about 110,000 Acres; affords Plenty of Corned Cattle; and is remarkable for the Redness of the Wool with the Sheep of that County produce, occasioned by Colour of the Soil.

Market Towns.

Upingham, w

Shropshire

Is a plentiful Inland County, the Air good, and so is the sil: It is in Circuit 134 Miles, containing about 890,000 lores, and affords Plenty of Corn, Wood and Pit-coal, begaccommodated by the River Severn.

Market Towns.

County-Town,

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Whitchurch, f

Newport, f

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Oakhampton,

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Venlock, m

Church-stretton, ta

Church-stretton, ta

Oswestry, m

Shipton, ta

Drayton, w

Somerfetsbire

ls a large plentiful Sea-county in the West of England, a Circumference 204 Miles, containing about 907,500 kees; it affords great Plenty of excellent Corn, and good butter, which feeds abundance of fine Cattle; and also ields Plenty of Lead, Copper, Crystal-stones, and Wead by Dyers: Its chief Manufactures are Cloth and Serges.

Market Towns.

withol is the Capital, we and f

wells, we and f

widgwater, th

khefter, we and f

kingwater, th

khefter, we and f

kingwater, th

khefter, we and f

Wellington to Bruton, f

Ilminiter, f

Dunfter, f

Watchet, /

Southpetherron, the Canisham, the Axbridge, the Creokhorn, for Sheptonmallet, for Charleton, for

Staffordfbire

Wivelfcomb, tu

Is an Inland County, containing about 810,000 Acres and is 141 Miles in Circuit's the Air is sharp, but very health-

healthful; the Soil different : Northward 'tis hilly and b ren; but Southward it is fruitful and pleafant, and affor Plenty of Corn, Grass, Iron, and Pit-coal; the Middle P is level, but fomething woody: This County also affo good Stone, Marble, Alabaster, and Lime-stone.

Market Towns.

Stafford is the Utuxetar, w Betley, 14 Eccleshal, f County-Town, Locke, w Ridgley, tu Litchfield, tu and f Tudbury, tu Browley, tu Newcastle, m Stow, tu. Burton, tb Breewood, tu Wolverhampton Penbridge, 14 Walshall, tu

Suffolk

Is a Sea-county, 140 Miles in Compais, and contain 905,000 Acres; the Soil different, the best Part about Lamundfbury; it affords abundance of Cattle, and Butter the best, but Cheese the worst in England.

Market Towns. Ipswich is the Prin-Ixworth, f Neyland, f Needham, w Lavenham, tu cipal, w, f, and Mildenhall, f S:owmarket, th Donwich, Loda ga Newmarket, th Bildeston, w Orford, m prod tra Beccles, Clare, f Aldborough, So or Bury, w Bungay, th Hadley, m Sudbury, f Hollworth, tu Mendlesham, to Framlington, Eye, Leftoff, w Woodbridge, w Dedingham, J

Surry

Is an Inland County, parted by the River Thames fro Middlefen: It contains about 592,000 Acres, and is in Con pals 112 Miles: The Country is plentiful, and the healthful; it is famous for Hunting and Horse racing; principal Goods are Hats made in Southwark for Export

Market Towns. Kingston, Southwark, w Guilford is the Croyden, / and / County-Town, Darking, the Farnham, th Rygate, tw.

Marwicksbire inpo D basial mad Is a pleafant, healthful, and plentiful County, 150Mi in Compais, and contains about 670,000 Acres: The So

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the most part is good and fertile; on the North a little mody: This County is remarkable for excellent Cheele, ming by its Name.

Warwick is the County-Town, f Colefhill, w Henley, m
Warwick is the Colefhill, w Henley, m
Warket Tewns.

Alcetter, in the Colefhill, w Henley, m
Kyneton, in

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Nuneaton, f
Rugley, f
Southam, m
Suttoncolefield, m

## Westmoreland

Is a County in the North-west of England: It is 120 Miles Circuit, containing about 510,000 Acres: This County bounds in Hills and Marshes; and is not very plentiful but some of the Vallies and Intervals, and towards the South.

market Town:

Ippleby is the Longfiale, 16 Kirbysteven, f

County-Town, f

Rutton, tu

Ambleside, w

Brough, w

## Wilthire .

is a fine Inland County, 140 Miles in Compais, and conins about 876,000 Acres: In the Middle lies Satisfeurylin, very remarkable for its large Extent, and for feeding the Numbers of Sheep; and therefore Wool is the print al Commodity.

Market Fowns.

Infoury is the Capital, w and formula, w and formula, w and formula, w aribon for the filter, w ariborough. for the filter, for

Caine, tu
Warminster, f
Bradford m
Amsbury, f
Auburn, tu
Swindon, m
Troubridge, f

### Worceftershire

Is a plentiful Inland County, 130 Miles in Circuit, and stains 540,000 Acres: the Soil is for the most part good dertile, affords Corn in great Plenty, and is very numera in Cattle; it yields Plenty of Fish and Fruit. The le of Evestiam is justly esteemed one of the most service ots in the Kingdom.

Market

Market

Worcester is the Capital, w, f, and f Evesham, m Bewdley, f Market Towns.
Droitwich, f
Stowerbridge, f
Kidderminster, th
Bromsgrove, tu

Pershore, tu-Tidbury, tu-Upton, th Shipton, f

## Yorkshire

Is a maritime County, and much the largest in all Estand; and is divided into three Parts, called Ridings, wo North, East, and West: 'Tis in general a plentiful Coun abounding in Corn, Cattle, Fish, and Fowl, and famo for breeding fine Saddle-horses. It is 320 Miles in Counference, and contains 3,770,000 Acres; it sends grounding its chiefest Manufacture,

Market Towns.

York is the Capital: Market-days Thursday and Saladay, with 36 other Market-Towns, too numerous here particularize.

## The Principality of WALES.

in the Reign of King Henry the VIIth, it was not porated with it. This Country is very mountainous a barren, except in the Vallies and Intervals, where it yie Plenty of Grass and Corn. The Situation is Westwa bordering on the Irish Sea; the Air bleak and sharp, wholesome; the Cattle are numerous, but very small; a on the Hills there are Goats in abundance. This Count is divided into North and South, wire.

#### North-Wales

Contains Anglesey, Carnarvonshire, Denbighshire, Fli

Anglesey is an Island in the North-west Part of a Country, about 80 Miles in Compass, and contains about 200,000 Acres. It affords Plenty of Corn, Cattle, Fi Fowl, and Mill-stones, (for grinding of Corn) in abudance: It has but two Market-towns, viz. Beauman and Newborough; Wednesday is the Market-day of the si and Tuesday of the latter.

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imarvon lagor, w lobich, 7 Denbigh 10,000 A fRye, C pes: Bu hid, exc entlemen e Count Trexbam retty Tov d lofty S Fint Bir it 82 Mi bib, and Tis d the In Commo ead, and lell, fo fa y, for Pr Merionet 00,000 A m yet not flaries fo otton-wo th a pret Montgom

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Carnarworfbire is a Sea-coast County, 110 Miles in Comficontaining about 340,000 Acres. It hath Plenty of lan, Cattle, Fish, and Wood; the Air is healthful, and Soil good, especially the western Part, which produces indance of excellent Barley.

#### Market Towns.

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Denbighshire is 116 Miles in Circuit, and contains about 10,000 Acres. The Middle of this County hath Plenty Rye, Coals, and Sheep; it bath also some small Leadines: But the chief Part of it is a Valley called Diffigure lind, exceeding pleasant and fertile, adorned with several melemens Seats, and those of good Estates. Denbigh is a County-Town, and the Market-day on Wadnesday. Instam is another of its principal Market-Towns, a many Town, and samous for its Market, neat Church,

flintshire contains about 160,000 Acres, and is in Cin182 Miles. It hath but three Towns, wiz. Flint, Sa.
184 Miles. It hath but three Towns, wiz. Flint, Sa.
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Merioneitificia is 180 Miles in Circuit, and contains about 180,000 Acres. The Country in general is mountainous, myet not without Plenty of small Cattle, and other New Maries for the Cilhabitants. The chief Manufacture is 1800 work. The principal Town is Harleeb, which the pretty good Market on Saturdays.

Montgomeryshire is in Compass 94 Miles, and contains 6,000 Acres. 'Tis fruitful, though mountainous, and this small Market-Towns, but no Manufactures worth bice.

## South-Wales

Contains Brecknockshire, Cardiganshire, Carmarthenire, Glamorganshire, Pembrokeshire, and Radnorshire.

BreckBreelneekshire is 106 Miles in Cheuit, and contains ab 620,000 Acres, divided into Hills and Valleys the but barren, but the latter very plentiful, wholefome, pleafant. Breekwock is the chief Town, and hath a g Trade for Cloathing; it hath two good Markets in a we wiz. Wednesdays and Saturdays. The Commodities Cattle, Fish, and some small Quantity of Otters Fur.

Cardigarshire is 94 Miles in Compals, and contains ab 520 000 Acres. It is fituated on the Bank of the hish s and hath Plenty of Corn, Cattle, Fish, Fowl, &c. late Years it is become remarkable for its Silver, Cop

and Lead Mines. The said of bill ad I were

Edrmartharshire is one of the most plentiful Counties all Wales, the Air good, and the Soil fertile. It affor Pienty of Corn, Cattle, Salmon, Wood, Pit-coal, and best Lead. 'Tis 120 Miles in Compass, containing at

700,000 Acres. (six lower A and bon , nwo I was

South Part, it is so fruitful, that it is called, The Garde Wa'es. It is 112 Miles in Circuit, and contains at 540,000 Acres. Card ff is the County-Town which ke two Market-days weekly, viz Wednesday and Saturday.

for the most Part surrounded by the Sea. It is 93 Mile Compass, and contains about 520,000 Acres. This Cou is famous for a Harbour called Milford Haven, which justly esteemed to be in all respects one of the best in Morld. Pembroke is the principal Town, whose Mar

is kept on Saturday.

Counties in all Waler. It is in Circuit to Miles, and tains about 310,000 Acres. The Affires are usually at Prefain: but Radner is the Shire Town, and hath a lerable Market upon Saturday, and Briffain hath and on Wednesday.

# Antennenthire is in Compais of Miles and contains

Is fituated to the North of Fngland; the capital Cit called Edinburgh; it is divided into the following shor Counties;

S. Glamorganthire, Pembroscibire, and Reduceflates

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To these may be added the Hebrides, or Western ! faid to be above 300 in Number, the most considerable which are Arran, Sky, and Mull; and the Ifles of Ork and Shetland to the Northward, of each of which, t are many in Number. . sisproiviT

#### Ireland

Is a large Island to the West of England and Scotl the chief City of which is Dublin; it is divided into Provinces, which are again subdivided into the follow Counties.

Edinburg! Drogheda, Balana sterling. Louth, Dublin, worthoon Dublin, Wickley ( Swicklass) Wicklow, niwil Wexford, Wexford. Longford, Longford, Molingar, Meath: King's County Philipstown, Maryborough, Queen's County, Kilkenny, Killkenny, Kildare, Kildare, Carlow, Catherlough, Down, Down Down, Armagh, Armagh, Monaghan, Monaghan, Cavan, Cavan, appleyd Aufne. Carrickfergus, Antrim, Londonderry Londonderry. Dungannen, asM Tirone, Innifkilling, Fermahagh, Donnegal. Donnegal. THE STATE OF Leitrim, Leitrim, Athlone, .... Roscommon, Gallway, Gallway, Mayo, banksmid CSleige, avending

Mayo, doon of Sliego.

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Tippe Water Clare, Limer Cork. Kerry.

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Clare,
Limerick,
Cork,
Dingle.

In St. George's Channel, almost equally distant from pland, Scotland, and Ireland, is situated the Isle of Man, Royalty of which, under the Kings of Great Britain, of formerly in the Family of the Stanleys Earls of Derby; the Male-issue of that Family being extinct, it is now ived by the Duke of Athol, who is descended from the se, by a Female Branch.

The Britannic Isles above described, are separated from me, on the South by the English Channel; and from Naberlands, Germany, Denmark, and Norway, by the man Ocean, on the East; the Northern and Western

is being washed by the Oceans so called.

The Netherlands have Germany to the East and North, Ginnan Ocean to the West, and France to the South; a consist of seventeen Provinces; of which seven comes Republic called the United Provinces; and the reming ten are subject to the House of Austria.

The seven United Provinces are inhabited by the Dutch, are commonly called Holland, after the Name of the considerable of them, the Names of the Provinces and Capitals follow.

[Holland, Zeland, Utrecht, Gelderland, Over-Iffel, Friefland, Groningen. Amsterdam,
Middleburg,
Utrecht,
Zutphen,
Deventer,
Lewarden,
Groningen.

he ten Provinces are now commonly called the AuNetherlands, or Flanders, from the Name of one of
ithe Names of the Provinces and their Capitals fol-

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There are also in Germany several free Cities, which are many small Commonwealths under the Protection of Germanic Body; such as Ratisbon, Francfort, Hamps, &c. And among the Alps are other small Commonwealths, commonly known by the Name of the Swissmans, the principal of which are Zurick, Bern, Basil, Friburgh; with these are consederated the Republic Geneva, and the Leagues of the Grison, all situate mong those Mountains.

The Kingdom of Hungary hath Poland on the North, many on the West, and on the other sides the Turkish more; the chief city is called Buda; other considerable is are Presburgh, Raab, Zygeth, Canisia, Alba-Regalis, m., Gerigonium, Pest, Temeswaer, &c. all samous in Mory on account of the Contests between the Christians

Muris, for the Sovereignty of this Kingdom.

It is at present under the Dominion of Maria Therefa, higher of the late Emperor Charles the Sixth, who is men of Hungary and Bohemia, Archduchess of Austria, is and is married to Francis Emperor of Germany, Great the of Tuscany, &c.

Poland is a large elective Kingdom, bounded on the East Crim-Tartary and Muscowy; on the North by Part of Westy and the Baltic sea; on the West by Germany, ton the South by Hungary and Part of Turkey; the Ca-

Desmark and Norway, two Kingdoms under the same seriegns, are bounded on the North and West by the tran, on the South by Part of Germany and the Baltic and on the East by Sweden: the Capital of Denmark alled Copenhagen, and that of Norway, Bergen.

South, Muscowy on the East, and the Ocean on the mi; the chief city is called Stackbolm:

Muscovy, or Russia, hath Part of Sweden and the Baltie on the West, Poland and Crim-Tartary on the South; mt-Tartary in Asia on the East, and the Ocean on the wh; the ancient Capital is called Moscow; but the Reace of the Court is now generally at Petersburgh on the thic Sea. This Empire is very extensive, being near as it all the rest of Europe. Peter III. is now Emperor. Min is separated from Europe toward the North West by Soundaries above described, toward the South West by

the Eastern Part of the Mediterranean Sea; and by the Ishn of Suez and the Red-Sea, which divide it from Africa; is bounded on the South by the Indian Ocean; on the E by the Pacific, and on the North by the Northern or From Ocean; its Dimensions may be conceived from what I lows: Holy-Cape, on the Northern Ocean, in Lat. 7 32 N. Long. 179; 45 E. bears from the Eastern Point Java, one of the Indian Islands, in Lat. 8:30 S. Long. 135; E. N. 28: 45 E. Distance 5540 Miles. And Ca Ava, in the Island of Japan, in the Pacific Ocean, 1 34:45 N. Long. 141:00 E. bears from Smyrna, in Archipelago, Lat. 38: 28 N. Long. 27: 25 E. S. 18, E. Distance 5550 Miles.

It seems most regular to divide this large Country cording to its present possessors, the Grand Seignier or E peror of the Turks, the Sophy or King of Persia, the Grand Mogul, and the other Potentates of India, the Emperor

China, and the Potentates of Tartary.

The Turks Possessions in Asia are Anatolia, Syria, Abia, Armenia or Turcomania, Georgia, and Mesopotas

or Diarbeck; of which in their Order.

Anatolia, formerly called Afia-minor, is encompassed the North, West, and South Sides, by the Euxine, Marmarian, the Archipelago, and the Mediterranean Se it is separated from Syria on the South East by the Motains called Taurus, and from Turcomania on the East the River Euphrates.

Its present Subdivisions are said to be sour, Anato Proper, on the North West, its capital City, Bursa: An sia, on the North East, having a Capital of the same Nan Caraman a on the South West, its Capital Cogni; and h

duli on the South East, its Capital Maraz.

Syria, called by the Turks Suristan, is generally sub vided into Syria Proper, Phanicia, and Palestine or dea; whose chief Cities are Aleppo, Damascus, and

rufaiem.

Arabia (a Country which preserves its ancient Natas do the Inhabitants their roaming Disposition) is bout ed on the West by the Red Sea and Isthmus of Suez; the North by Palestine, Syria, and Diarbeck; on the by the Persian Gulph, and on the South East by the Abian Sea, a Part of the Indian Ocean.

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It is divided into three Parts, called the Defert, the Stony, and the Happy; the two first lie to the Northward, the

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There are very few Towns in the desert or stony Parts of this Country, the Arabs living in Tents, and removing with their Families from Place to Place as Profit or Convenience suggest. But in Arabia the Happy (one of the finest Countries in the World) there are several of Note, such as Medina, where the Sepulchre of Mahomed, the Founder of the Turkish Religion, is; Mecca, his Birth-place, to which every Turk or Musselman is obliged by that Religion to come in Pilgrimage once in his Life time, or to and another in his Stead; Aden, a Place of Traffic; Sana, Mecha, Soar, and others.

Armenia or Turcomania is bounded on the West by hatolia, on the South by Diarbeck, on the East and North Georgia and the Euxine Sea; its principal Cities are

Amerum, Chars, and Van.

Georgia, formerly called Iberia, including Mingrelia and Gurgestan, is bounded on the North by Part of Muswo, on the West by the Euxine Sea, on the South by Incomania, and Part of Persia, and on the East by Part of Persia; the Cities of greatest Note are Fassa and Issue.

Mesopotamia or Diarbeck is bounded on the North by Incomania, on the West by Syria, on the South by Arabia to Desert, and on the East by Persia; its principal Cities

he Diarbekir, Moful, and Bagdat.

Besides these large Possessions on the Continent of Asia, the Turks hold several Islands in the Archipelago; with Bodes and Cyprus in the Mediterranean Sea, the last of

which is very confiderable.

The next Division of Asia, proceeding eastwardly, is Insia, which has the Turkish Dominions on the West, the Persian Gulph and Part of the Indian Ocean on the South, the Empire of the Great Mogul on the East, and, in the North, Part of Tartary, the Caspian Sea, and Part of the Muscovian Empire.

This is a very large Country, but at present torn to mes by different Competitors for the Sovereign Power; le capital City is Ispahan; the most considerable of the there are Derbent on the Caspian Sea, and Gombroon and

defora on the Persian Gulph.

. Proceeding full Eastward, the next Empire is that of the Great Mogul, which has Perfin on the West, the two hide Peninfulas and the Bay of Bengal on the South, China of the East, and Part of Fartary on the North.

This is another large Tract, with the inland Parts of

which the Europeans are not much acquainted.

The principal Cities are Agra, Labor, Delli, Cabul, an Caximir; but whether Agra or Labor is the Capital. difficult to determine, as Authors do not agree concernin in: it is agreed, however, that the Mogul hath a magni ficent Palace at each of those Cities.

The maritime Parts of the Continent of India are divide by the Bay of Bongal, a Branch of the Indian Ocean, int two Peninfulas, anciently called India within or on this Sid the Ganges, and India without or beyond the Ganges; be fides which two Peninfulas there are feveral large Island belonging to India, of all which in their Order.

The Peninsula on this Side the Ganger contains fevera distinct Territories or Kingdoms, most of which either a or were subject, or at least tributary, to the Mogul; the Western Side thereof is called the Coast of Malabar, th

Eastern the Coast of Coromandel.

The Coast of Malabar contains several European Settle ments; fuch as Bombay, an Island belonging to the English East India Company, and Goa to the Portuguese, at each of which they have the Sovereignty; and the English trade: least, if they have not Forts, at Guzurat, Surat, Calicu and Cochin.

The Island called Ceilan or Ceylon, by fome called Z loan, is fituated a little to the East of Cape Comorin, the

most Southern Point of this Peninsula.

The Coast of Coromandel, which is washed by the Ba of Bengal, tends towards the North and North East for Cape Comorin, and extends to the Mouth of the Gangu the principal Settlements of the English on this Coast an Madraft or Fort St. George, and Fort St. David, De which the French have a strong Settlement called Pour cherry; which neighbouring Settlements have for for time past been at war with each other, with various So cefs, the Natives, headed by their Princes, called Nabob having taken Part therein, some on one Side, and some the other.

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ame Nan

The Peninsula on the other Side of the Ganges consists of the large Kingdoms of Bengal, having a Capital of the sine Name: Pegu, whose chief Cities are Pegu and Arram; Siam, having a Capital of the same Name: Malacea, state to the South, is almost incompassed by the Sea, and the City, so called, is situate near the Southern Extremity; Subin-china, whose chief City is Cambodia, and Tunquin, whose Capital is of the same Name.

South West of Malacca is the Island of Sumatra.

South East of this lies the Island of Java, separated by the Straits of Sunda; the Western Point of which is called Java-Head by English Mariners, it being often the first Land made by them after they have doubled the Cape of Good-Hope; the principal Cities are Bantam and Ratavia, the latter of which belongs to the Dutch East-India Company, who are Sovereigns (or, if not, yet act as such) over the greatest Part of this large and fruitful Island.

Eastward from Malacca and Sumatra is the Mand Bornes,

almost round, and near 600 Miles in Diameter.

The Island Celebes is to the East of Bornes, and much less than it. Proceeding Eastward are the Molucca or Spice-funds; the Dutch have made themselves Masters of these, and thereby ingross the Spice-trade to themselves.

The Philippine Isles are very numerous, some Authors aving reckoned 10,000 of them; the most considerable is

luonia, whose Capital is Manilla.

To the North and North Wost of these is situated the ment Empire of China, reckoned by some to be as hig as a Europe; it hath the Pacific Ocean on the East and South Last; Cochin-china and Tunquin on the South West; the Mogul's Empire on the West, and on the North West and North a Part of Tartary.

There are a great Number of Cities in this Empire, of thich Pekin, fituated in the Northern Part of the Country, is the Capital; the European Trade to this Country is the carried on at Canton, a great Sea-port in one of the

Southern Provinces.

The most considerable Chinese Islands are those which impose the Empire of Japan; which consists of several large Islands, three of which are very considerable, wix. Ispan or Niphon, whose Capital is Meaco; Tonsa, whose Capital is Sanuqui; and Bongo, whose Capital bears the lane Name.

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Thus we have taken a cursory Survey of all the souther Parts of Asia; the northern hath only one general Name wiz. Tartary, which has Persia, India and China, on the South, the Pacific Ocean on the East, the northern or frozen Ocean on the North, and Muscowy on the West; the large Track is subject to divers Potentates, some of whom

are very little known.

Africa is a large Peninsula which is joined to the Continent of Asia by the Ishmus of Suez, a narrow Desert be tween the Mediterranean and Red Seas; its Magnitud may be conceived by knowing that the Cape of Good-Holin Lat. 34° 15 S. Long. 20° 07' E. bears from Ceuta i Lat. 35° 45' N. Long. 4° 42' W. S. 18° 15' E. Distance 440 Miles; and that Cape Guardasuy, in Lat. 11° 4 N. Long 50° 25' E bears from Cape Sierra Leone in La 8° 30' N. Long. 12° 7' W. N. 87° 00' E. Distance 370 Miles.

Very little of the inland Parts of this Continent a known to the Europeans; so that only the Sea-coasts we be mentioned here, beginning at the Ishmus of Sun

and coasting first the Mediterranean Sea.

Egypt is under the Dominion of the Turks, its prese Capital is called Cairo; the piratical States of Tripoly, T mis, and Algiers, have Capitals of the same Name, and the Capital of the Empire of Morocco is the City of Fex.

Along the Coasts of the Atlantic Ocean, there are rextensive Dominions, the Inhabitants being mostly subjeto petty Princes of their own, who being almost continual at War with one another, sell their Prisoners for Slave The European Nations have been induced, for the Protetion of their Trade therein, and other Commodities, erect several small Forts in different Places, to enumera which would be tedious: The Madeiras, the Canari and the Cape de Verde Islands, are the most considerable this Coast; the only one possessed by the English is a vessessed one, called St. Helena, frequented by the East-Internal

At the fouthern Extremity of the Continent is fitted the Cape of Good-Hipe, where the Dutch East-India Conpany have built a tolerable Town, for the Convenience their Shipping; from hence again, along the East Coast, both on the Ocean and in the Red Sea, very in

that is remarkable offers itself.

At fom hich is Mands in differer Americ overed : nknown livided in South An d Darien The Se Countries he French City is 2 hich, ru em the he Count o the En Mouth of m*, a m The En be Atlant lat. 33° 2 Nova-S 10' W. D

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hve been to how in the I At some Distance, however, from that Part of this Coast which is washed by the Ocean, is situated one of the largest stands in the World, called Madagascar, which has been different Times the Asylum of European Pirates.

America, by some called the new World, because disowered about 260 Years ago, being, before that Time; inknown to the Inhabitants of Europe, Asia, and Africa, is inided into two remarkable Divisions, called North and both America, which are joined together by the Ishmus

Darien, or Panama.

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Safta y Jia The Sea-coast of North America, and Part of the inland Countries, are at present subject to the European Nations; the French possess Canada or New-France, whose capital City is Quebec*, situate on the great River St. Laurence, which, running behind the English Settlements, has given the the Opportunity of extending themselves far up into the Country, and becoming very troublesome Neighbours to the English; Newfoundland, a large Island near the Houth of this River, belongs to the English, and Cape-Brem*, a much smaller, but well fortisted, to the French.

The English possess a large Track of the Sea coast of the Atlantic Ocean, for Charles Town in South Carolina, lat. 33° 22' N. Long. 79° 50' W. bears from Cape-Canse a Nova-Scotia, Lat, 45° 10' N Long. 59° 50' W. S. 52° 10' W. Distance 1160 Geographical Miles; which, at 69½ lighth Miles to a Degree, make 1345 English Miles; which, making Allowance for the Windings of the Coast, may be very well supposed to be really more than 1500 lighth Miles. The Names of their Plantations or Settle-

ments, with their chief Towns, follow:

Nova-Scotia,
New-England,
New-York,
Pensylvania,
New-Jersey, East,
New-Jersey, West,
Maryland,
Virginia,
North-Carolina,
South-Carolina.
Georgia,

Halifax,
Boston,
New-York,
Philadelphia,
Elizabeth Town,
Essingburgh,
Baltimore,
James-Town,
Edenton,
Charles-Town,

Quebec, Cape-Breton and several other Fortresses in those Parts, have been taken from the French during this glorious War, and are now in the Possession of the English.

The Spaniards possess the Sea coast of Florida, the resolution Country, the principal Settlement therein be St. Augustin; the French have some Settlements to West of these along the River Mississippi, which empties self into the Gulph of Mexico; the principal is Fort Lo from whence the Country is called Louisiana.

More to the South West is the Empire of Mexico and Dependents, having a Capital of the same Name, sub to the Spaniards; this Country extends itself westward the Pacific Ocean, and the Spaniards send Ships yearly so Acapulco, a Port therein, across the Ocean, to the Phi

pine Isles in the East-Indies.

Northward, on the Pacific-Ocean, is New-Mexico, the Island of California; but of these we know but little The Continent of South-America confists of the following

ing large Districts:

Terra Firma. Panama, Spaniard Golden-Castile, Spaniard Carthagena, Guiana, Surinam, Dutch, Peru, Lima. Spaniard Chili, Spaniard St. Jago, Patagonia, Natives, Terra del Fuego, Natives, La Plata, Buenos Aires, Spaniard Brazil. St. Salvador, Portugue Paraguay, leinits. Affumption, Amazonia. Natives.

N. B. Terra del Fuego is an Island separated from Pagonia by the Strait of Magellan.

The Gulph of Mexico, Yuchutan, Honduras, and Caribbean-Sea are separated from the Atlantic Ocean by great Number of Islands, called the Bahama, the great and lesser Antilles, and the Caribbee-Islands. The Name of the most considerable are as follow.

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Doming
maica,
mo-Rico
guilla,
buda,
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eris, nigua, intferrat madoes, adaloup ininico, Martin,

The Isla

a Cruz

Lucia.

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Havannah. French, and Vaniola, or St. Domingo, Spaniards. Domingo, Port Royal English. maica, m-Rico, Porto Rico, Spaniards. willa, English English buda. English, Christopher's, English, TIS, ogua, English, English. atferrat, hadoes, Bridge-Town, English, adaloupe, English. E French, minico, Martin. English, French. a Cruz. Lucia. French.

The Islands called Bermudas, lying about 500 Leagues of Florida, are subject to the English.

## ASTRONOMY.

STRONOMY is a Science which treats of the Motions and Distances of the heavenly Bodies, and the Appearances thence arising.

There have been a great Variety of Opinions, among Philosophers of the preceding Ages, concerning the motion of the great Bodies of the Universe, or of the Misson of the Bodies which appear in the Heavens: But Notion now embraced by the most judicious Astronom, is, that the Universe is composed of an infinite Number Systems or Worlds; that in every System there are him Bodies moving in free Space, and revolving at diffet Distances around a Sun, placed in or near the Center the System; and that these Suns, or other Bodies, are stars which are seen in the Heavens.

That System, in which our Earth is placed, is by Astromers called the Solar System; and that Opinion, which soles the Sun to be fixed, in or near the Center, with sal Bodies revolving round him, at different Distances, commed by all the Observations hitherto made.

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This Opinion is also called the Copernican System; Nicholas Copernicus, a Polish Philosopher, who, about Year 1473, revived this Notion from the Oblivion it been buried in for many Ages.

The Sun therefore is placed in the midft of an imm Space, wherein fix opaque spherical Bodies revolve a

him as their Center.

These wandering Globes are called the Planets, wi different Distances, and in different Periods, perform Revolutions, from West to East, in the following Order

I. & Mercury * is nearest to the Sun of all the Pla and performs its Course in about three Months, or 23ho. II. & Venus, in about seven Months and a hal 224d. 17ho. III. + The Earth, in a Year, or 36cd. IV. & Mars, in about two Years, or 686d. 23ho. V. 1 piter, in twelve Years, or 4232d. 12ho. VI. and laftly Saturn, whose + Orbit includes all the rest, spends al thirty Years. that is 10759d. 8ho. in one Revolution re the Sun. The Distances of the Planets from the Sun nearly in the following Proportion, viz. supposing Distance of the Earth from the Sun to be divided 1000 equal Parts, that of Mercury will be about as those Parts; of Venus 724; of Mars 1524; of Jupiter ; and, that of Saturn, 9538.

The Orbits of the Planets are not all in the same P but variously inclined to one another; so that, support the Orbit of the Earth to be the Standard, the others have one half above, and the other half below it; i secting one another in a Line passing through the Sun

The Plane of the Earth's Orbit is called the Edig and this the Aftronomers make the Standard, to which Planes of the other Orbits are judged to incline.

The right Line passing through the Sun, and common Intersection of the Plane of the Orbit of Planet with the Ecliptic, is called the Line of

The Characters, placed before the Names of the Planets, Brevity's fake commonly made use of by Astronomers, instead Words at length, as Q for Venus, &c.

† By the Orbit of a Planet, is commonly understood the Fra Ring, deferibed by its Center round the Sun; but, by the Plane Orbit, is meant a flat Surface, extended every way through the infinitely.

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Nodes of that Planet, and the Points themselves, wherein to Orbit cuts the Ecliptic, are called the Nodes.

The Inclinations of the Orbits of the Planets to the Plane the Ecliptic, are as follows, viz. the Orbit of Mercury takes an Angle of 6° 52'; that of Venus 3° 23'; of Mars 1°52'; of Jupiter 1° 20'; and of Saturn 2° 20'. The Orbits of the Planets are not Circles, but Ellipses or Orals.

What an Ellipsis is, may be easily understood from the flowing Description; imagine two small Pegs fixed upint on any Plane, and suppose them tied with the Ends Thread, somewhat longer than their Distance from meanother; now if a Pin be placed in the Double of the Thread, and turned quite round (always firetching the firead with the same Force) the Curve described by the Motion will be an Ellipsis. The two Points where the less flood, (about which the Thread was turned) are called Focus's or Foci of that Ellipsis; and if, without changgthe Length of the Thread, we alter the Position of the les, we shall then have an Ellipsis of a different Kind on the former; and the nearer the Focus's are together, e nearer will the Curve described be to a Circle! unat last the two Focus's coincide, and then the Pin the Doubling of the Thread will describe a perfect Grele.

The Orbits of all the Planets have the Sun in one of the Focus's, and half the Distance between the two Focus's is called the Excentricity of the Orbits. This Expericity is different in all the Planets, but in most of the it is so small, that in little Schemes or Instruments, and to represent the planetary Orbits, it need not be contracted.

If, as before, we suppose the mean Distance of the and from the Sun to be divided into 1000 Parts; then the Excentricity of Mercury be 81 of those Parts; that I'mu, 5; that of the Earth, 17; that of Mars, 141; to Jupiter, 240; and that of Saturn, 543 of the same and

The Six Planets above mentioned, are called Primaries, primary Planets; but, besides these, there are ten other Planets; which are called Secondaries, Moons, or tellites. These Moons always accompany their respec-

tive Primaries, and perform their Revolutions round the whilst both together are also carried round the Sun.

of the fix Primary Planets, there are but three, as as Observation can assure us, that have these Attendan

wiz. the Earth, Jupiter, and Salurn.

The Earth is attended by the Moon, who performs he Revolution in about 20½ Days, at the Distance of about 20½ Diameters of the Earth from it; and once a Year

carried round the Sun along with the Earth.

Jupiter has four Moons or Satellites; the First or inner most performs its Revolution in about one Day and 1 Hours, at the Distance of 5 ½ Semidiameters of Jupiter in Days and 13 Hours, at the Distance of 9 of his Semidiameters; the Third in 7 Days and 4 Hours, at the I stance of of 14½ Semidiameters; the Fourth and outerm performs its Course in the Space of 16 Days 18 Hours and its Distance from Jupiter's Center is 25½ of Semidiameters.

Saturn has no less than five Satellites; the First or nermost revolves about him in 1 Day and 21 Hours, at Distance of 4 Diameters of Saturn from his Center; to Second completes his Period in 2 Days, at the Distance of 3 Diameters; the Third, in about 4 Days, at the Islance of 8 Diameters; the Fourth performs its Course about 16 Days, at the Distance of 8 Diameters; the First and outermost rakes 79 Days to finish his Course, and 54 Diameters of Saturn distant from his Center. The Stellites, as well as the Primaries, perform their Revolution from West to East; the Planes of the Orbits of the Stellites of the same Planet are variously inclined to another, and consequently are inclined to the Plane of their Primary.

Besides these Attendants, Saturn is incompassed with thin Ring that does no where touch his Body; the Diameter of this Ring is to the Diameter of Saturn, as 9 to and the void Space, between the Ring and the Body Saturn, is equal to the Breadth of the Ring itself; so the in some Situations, the Heaven may be seen between

Ring and his Body.

This furprising Phenomenon of Saturn's Ring is a Medern Discovery; neither were the Satellites of Junary and Saturn known to the Ancients; the Jovial Plan

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set first discovered by the famous Italian Philesopher, Galileus, by a Telescope which he first invented : and ne celebrated Caffini, the Franch King's Aftronomer, us the first that faw all the Satellites of Satura; which by maion of their great Distances from the Sun, and the smallness of their own Bodies, cannot be feen by us, but the Help of very good Glaffes.

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The Motion of the primary Planets round the Sun (as illo of the Satellites round their respective Primaries) is alled their annual Motion; because they have one Year, or the Alterations of the Seafons, complete, in one of those Revolutions. Befides this annual Motion, four of the Planets viz. Venus, the Earth, Mars, and Jupiter, rewive about their own Axes, from West to East; and this s called their diurnal Motion, For, by this Rotation, ech Point of their Surfaces is carried fuccessively towards, or from the Sun, who always illuminates the Hemisphere which is next to him, the other remaining ofcure: and, while any Place is in the Hemisphere illyminated by the Sun, it is Day; but when it is carried to the obscure Hemisphere, it becomes Night; and so contimes until, by this Rotation, the faid Place is again onightened by the Sun.

The Earth performs its Revolution round its Axis in 23 Hours 56 Minutes; Venus in 23 Hours; Mars in about 4 Hours and 40 Minutes; and Jupiter moves round his

own Axis in 9 Hours and 56 Minutes.

The Sun is also found to turn round his Axis from West to East in 27 Days; and the Moon, which is nearest to s of all the Planets, revolves about her Axis in a Month, or in the space of Time that she turns round the Earth a that the Lunarians have but one Day throughout their Year.

The Planets are all opaque Bodies, having no Light but what they borrow from the Sun: For that Side of them, which is next towards the Sun, has always been observed to te illuminated, in what Position soever they be to but the opposite Side, which the folar Rays do not reach; remains dark and obscure: whence it is evident that they have no light but what proceeds from the Sun; for if they had, all Parts of them would be lucid, without any Darknels or shadow. The Planets are likewise proved to be globular, because, let what Part soever of them be turned towards the Sun, its Boundary, or the Line separating that Part for the opposite, always appears to be circular; which con not happen if they were not globular.

The Earth is placed betwixt the Orbs of Mari a Venus; and Mercury, Venus, Mars, Jupiter, and Satu do all turn round the Sun; both which may be pro-

from Observations, as follows:

1. Whenever Venus is in Conjunction with the Sun to is, when she is in the same Direction from the Earth, towards the same Part of the Heavens the Sun is in; either appears with a bright and round Face, like a Moon, or else disappears; or, if she is visible, she appear horned, like a new Moon; which Phenomena could new happen, if Venus did not turn round the Sun, and not betwixt him and the Earth; for fince all the Plan borrow their Light from the Sun, it is necessary that A nus's lucid Face should be towards the Sun; and when appears fully illuminated, the thews the fame Face to Sun and the Earth; whence, at that Time, the must above or beyond the Sun, for (in no other Position) con her illuminated Face be wholly feen from the Earth. It ther, when the disappears; or, if visible, appears home that Face of hers, which is towards the Sun, is eit wholly turned from the Earth, or only a small Part of can be feen by the Earth; and in this Cafe the must necessity be betwixt us and the Sun.

Besides the foregoing, there is another Argument prove, that Venus turns round the Sun in an Orbit is within the Earth's; because she is always observed keep near the Sun, and in the same Quarter of the He vens that he is in, never receding from him more is about \$\frac{1}{8}\$ of a whole Circle; and therefore she can be come in Opposition to him, which would necessarily be pen, did she perform her Course round the Earth either

a longer or shorter time than a Year.

And this is the Reason, why Venus is never to be a near Midnight, but always either in the Morning or Enging, and at most not above three or four Hours be Sun-rising or after Sun-setting. From the Time of Venus fuperior Conjunction (or when she is above the Sun) in more easterly than the Sun, and therefore sets later, and seen after Sun-setting; and then she is commonly at the Evening-star: but from the Time of her inserior Constants.

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nd Venus, Mars, Jupit sperior Plan inction, till the comes again to the superior, the then appears more westerly than the Sun, and is only to be feen in the Morning before Sun-rising, and is then called the Morning far.

After the fame manner, we prove that Mercury turns bound the Sun, for he always keeps in the Sun's Neighbourhood, and never recedes from him to far as Venus does; and therefore the Orbit of Mercury must lie within hat of Venus: and, on account of his Nearness to the Sun.

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Mars is observed to come in Opposition, and likewise to lave all other Afpects with the Sun; he always preferves round, full, and bright Face, except when he is near his quadrate Aspect, when he appears somewhat gibbous, like he Moon three or four Days before or after the Full: Therefore the Orbit of Mars must include the Earth withit, and also the Sun; for if he was betwixt the Sun and s at the time of his inferior Conjunction, he would either quite disappear, or appear horned, as Venus, and the Moon. o in that Position.

Mars, when he is in Opposition to the Sun, looks almost even times larger in Diameter, than when he is in Conjuncion with him; and, therefore must needs be almost seven mes nearer to us, in one Position, than in the other: For he apparent Magnitudes of far distant Objects increase, or ecrease, in proportion to their Distances from us; but lars keeps always, nearly, at the same Distance from the on; therefore it is plain, that it is not the Earth, but the oun that is the Center of his Motion.

It is proved, in the same way, that Jupiter and Saturn ave both the Sun and Earth within their Orbits; and hat the Sun, and not the Earth, is the Center of their lotions; although the Disproportion of the Distances from he Earth is not so great in Jupiter as in Mars, nor so reat in Saturn as it is in Jupiter, by reason that they are

ta much greater Distance from the Sun.

We have now shewn that all the Planets turn round the un, and that Mercury and Venus are included between him nd the Earth; whence they are called the inferior Planets; nd that the Earth is placed between the Orbits of Mars nd Venus, and therefore included within the Orbits of lars, Jupiter, and Saturn; whence they are called the perior Planets: And fince the Earth is in the Middle of

thefe

these moveable Bodies, and is of the same Nature wi them, we may conclude, that the has the fame for Motions; but that the turns round the Sun, is prove thus:

All the Planets feen from the Earth appear to mor very unequally; as sometimes to go faster, at other time flower, and fometimes to be flationary, or not to more all; which could not happen if the Earth food fill.

The annual Periods of the Planets round the Sun determined, by carefully observing the Length of The fince their Departure from a certain Point in the Heaver (or from a fixed Star) until they arrived to the fame again By these forts of Observations, the Ancients determin the periodical Revolutions of the Planets round the Sun and were so exact in their Computations, as to be capab of predicting Echples of the Sun and Moon & But fince the Invention of Telescopes, astronomical Observations made with greater Accuracy, and of confequence of Tables are far more perfect than those of the Ancients.

And, in order to be as exact as possible, Aftronome compare Observations made at a great Distance of Tim from one another, including several Periode; by which means the Error that might be in the whole, is in each Period subdivided into fuch little Parts, as to be very in considerable. Thus the mean Length of a folar Year

known even to Seconds. The of the hopping in the

The diurnal Rotation of the Planets round their Ax was discovered by certain Spots which appear on the Surfaces: these Spots appear first on the Margin of the Planets Difks (or the Edge of their Surfaces) and feem b degrees to creep towards their Middle; and fo on, goin fill forward, till they come to the opposite Side or Edged the Difk, where they fet or disappear; and after they has been hid for the same Space of Time that they were vilible they again appear to rife, in or near the fame Place as they did at first; then to creep on progressively, taking the fame Course as they did before. These Spots have been observed on the Surfaces of the Sun, Venus, Mary M Jupiter; by which means it has been found, that the Bodies turn round their own Axes in the Times before

It is very probable, that Mercury and Saturn have like wife a Motion round their Axes, that all the Parts of the

rface may n, and re ent for the lucury to m, no Ob eir Spots erefore th furnal Mo pparent R nd it, in her to co oold turn at fuch a them to

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face may alternately enjoy the Light and Heat of the and receive such Changes as are proper and conveent for their Nature; but, by reason of the Nearnels of freury to the Sun, and Saturn's immense Distance from n, no Observations have hitherto been made, whereby er Spots (if they have any) could be discovered, and brefore their diurnal Motions cannot be determined. The umal Motion of the Earth is concluded to exist from the parent Revolution of the Heavens, and of all the Stars and it, in the Space of a natural Day. For it is much her to conceive, that this, comparatively small Globe, ould turn round its own Axis, once in 24 Hours, than at fuch a great Number of much larger Bodies, some them to immensely distant, should revolve round it in so on a Space of Time. The folar Spots do not always rein the same, but sometimes old ones vanish, and afterands others succeed in their Room; sometimes several mil ones gather together and make one large Spor, and metimes a large Spot is feen to be divided into many ones. But notwithstanding these Changes, they all m round with the Sun in the same time.

Each Planet is observed always to pass through the Conelations Aries, Taurus, Gemini, Cancer, Leo, Virgo, ibra, Scorpio, Sagittarius, Capricornus, Aquarius, Pisces, ad it also appears that every one has a Track peculiar to felf; whereby the Paths of the fix Planets form, among te Stars, a kind of Road, which is called the Zodias; the fiddle Part whereof, called the Ecliptic, is the Orbit demibed by the Earth, with which the Orbits of the other

lanets are compared.

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he Su As the Ecliptic runs through twelve Constellations, it is sposed to be divided into twelve equal Parts, of 30 Denees each, called Signs, having the same Names with the

elve Constellations they run through.

The Plane of the Ecliptic is supposed to divide the cedial Sphere into two equal Parts; called the Northern and whern Hemispheres; and a Body situate in either of these emispheres, is said to have North or South Latitude, acording to the Hemisphere it is in: So that the Latitude of celestial Object is its nearest Distance from the Ecliptic. The Planes of the other sive Orbits are observed to lie

rely in the northern and partly in the fouthern Hemihere; so that every one cuts the Ecliptic in two oppofite Points called Nodes; one, called the Ascending No is that thro' which the Planet passes, when it moves out the southern into the northern Hemisphere; and the ot called the descending Node, is that through which Planet must pass, in going out of the northern into southern Hemisphere.

The Right-line joining the two Nodes of any Planet

called the Line of the Nodes.

The Names to most of the Constellations were given the ancient Astronomers, who reckoned that Star in Ar now marked or (according to Bayer) to be the first P in the Ecliptic, this Star being next to the Sun when entered the vernal Equinox; and at that time each C stellation was in the Sign by which it was called; But fervations shew, that the Point, marked in the Heavens the vernal Equinox, has been constantly going backwa by a small Quantity every Year; whereby the Stars app to have advanced as much forwards, fo that the U stellation Aries is now almost removed into the Sign Taur the faid first Star in Aries being got almost 30 Degrees wards from the Equinox; which Difference is called Procession of the Equinoxes, whereof the yearly Altera is about 50 Seconds of a Degree, or about a Degree in Years.

All the Planets have one common Focus, in which Sun is placed: For as no other Supposition can solve the Appearances that are observed in the Motion of Planets, and as it also agrees with the strictest physical mathematical Reasoning; therefore it is now received a elementary Principle.

The Line of the Nodes of every Planet passes through the Sun; for as the Motion of every Planet is in a P passing through the Sun, consequently the Intersection these Planes, that is the Lines of the Nodes, must

pass through the Sun.

All the Planets in their Revolutions are sometimes not sometimes farther from the Sun: This is a Consequent the Sun not being placed in the Centre of each Orbit, Orbits being Ellipses.

The Aphelion, or superior Apsis, is that Point of Orbit which is farthest distant from the Sun: And the rihelion, or inferior Apsis, is that Point which is not the Sun: And the transverse Diameter of the Orbit

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the Planets move faster as they approach the Sun, or e nearer to the Perihelion, and flower as they recede the Sun, or come nearer the Aphelion : This is not Confequence from the Nature of the Planets Motions the Sun, but is confirmed by all good Observations. fa right Line be drawn from the Sun, through any net (which Line is called by fome the Vettor Radius) be supposed to revolve round the Sun with the Planet, this line will describe, or pass through every Part of Plane of the Orbit, fo that the Vector Radius may be to describe the Area of the Orbit.

There are two chief Laws observed in the Solar System. in regulate the Motions of all the Planets; namely:

The Planets describe equal Areas in equal Times: is in equal Portions of Time the Vector Radius dehes the equal Areas or Portions of the Space contained hin the Planet's Orbit.

II. The Squares of the periodical Times of the Planets with Cubes of the mean Distances from the Sun: That is the Square of the Time which the Planet, A, takes to olve in its Orbit, is to the Square of the Time taken by other Planet, B, to run through its Orbit; fo is the te of the mean Distance of A from the Sun, to the Cube

the mean Distance of B from the Sun.

The mean Distance of a Planet from the Sun is its fance from him, when the Planet is at either Extremity the conjugate Diameter; and is equal to half of the offices niverse Diameter.

The foregoing Laws are the two famous Laws of Kepler, reat Aftronomer, who flourished in Germany about the ginning of the 17th Century, and who deduced them ma Multitude of Observations: But the first, who deinfrated these Laws, was the incomparable Sir Isaac wton.

by the second Law, the relative Distances of the Planets on the Sun are known; and was the real Distance of one known, the absolute Distances of all the others ould thereby be obtained.

Beside the Planets, already mentioned, there are other tat Bodies, that fometimes vifit our System, which are on of temporary Planets; for they come and abide with us for a while, and afterwards withdraw from us for tain Space of Time, after which they again return. wandering Bodies are called Comets.

The Motion of the Comets in the Heavens, acco to the best Observations hitherto made, feem to be lated by the same immutable Law with the Planets their Orbits are elliptical, like those of the Planets vaftly narrower or more excentric. Yet they have n the same Direction with the Planets, who move from to East, for some of the Comets move from East to and their Orbits have different Inclinations to the E. Orbit; some inclining northwardly, others buthwa much more than any of the planetary Orbits do.

Although both the Comets and the Planets move liptic Orbits, yet their Motions feem to be vafily differ for the Excentricities of the Planers Orbits are fol that they differ but little from Circles; but the Exce cities of the Comets are fo very great, that the Motion fome of them feem to be almost in right Lines, ter

directly towards the Sun.

Now, fince the Orbits of the Comets are to enter excentric, their Motions when they are in their Peri or nearest Distance from the Sun, must be much ly than when they are in their Aphelia, or farthel Di from him; which is the Reason why the Comets ma short a Stay in our System, and, when they disappear

fo long in returning.

The Figures of the Comets are observed to be different; some of them send forth small Beams, like every way round them; others are feen with a long Tail, which is always opposite to the Sun. Their M tudes are also very different, but in what Proportion exceed each other, is as yet uncertain. Nor is it pro that their Numbers are yet known, for they have not observed with due Care, nor their Theories discovered of late Years. The Ancients were divided in their nions concerning them; fome imagined that they only a kind of Meteors, kindled in our Atmos and were there again diffipated; others took them some ominous Prodigies; but modern Discoveries that they are Worlds, subject to the same Laws of as the Planets are; and they must be very hard and du Bodies, elfe they could not bear the vast Heat

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of them, when in their Perihelia, receive from the without being utterly confirmed. The great Comet, appeared in the Year 1686, was within ? Part of sm's Diameter from his Surface; and therefore its must be prodigiously intense, beyond Imagination: when it is at its greatest Distance from the Sun, the must be as rigid.

he fixed Stars are those bright and shining Bodies in a clear Night, appear to us every-where distinct through the boundless Regions of Space. They made fixed, because they are found to keep the same mable distance, in all Ages, without having the Moconfidence of the Planets. The fixed Stars are all plants such immense Distances from us, that the best of

topes represent them no bigger than Points, without

sevident from hence, that all the Stars are luminous is, and thine with their own proper and native Light, they could not be seen at such a great Distance. For satellites of Jupiter and Saturn, though they appear considerable Angles through good Telescopes, yet

thought the Distance betwixt us and the Sun is vastly, when compared to the Diameter of the Earth, yet nothing when compared with the prodigious Distance to fixed Stars; for the whole Diameter of the Earth's all Orbit, appears from the nearest fixed Star no bigger a Point, and the fixed Stars are at least 100,000 times or from us than we are from the Sun; as may be destrated from the Observations of those who have en-

pured to find the Parallax of the Earth's annual Orbit, a Angle under which the Earth's Orbit appears from used Stars.

ince it follows, that though we approach nearer to fixed Stars at one time of the Year than we do at apposite, and that by the whole Length of the Diatof the Earth's Orbit; yet this Distance, being so small imparison with the Distance of the fixed Stars, their intudes or Positions cannot thereby be sensibly alteredates we may always without Error suppose ourselves in the same Center of the Heavens, since we have althe same visible Prospect of the Stars without any ration.

If a Spectator was placed as near to any fixed Star we are to the Sun, he would there observe a Body as and every way like, as the Sun appears to us; and our would appear to him no bigger than a fixed Star; and doubtedly he would reckon the Sun as one of the numbering the Stars. Wherefore fince the Sun differing nothing from a fixed Star, the fixed Stars may be reced as so many Suns.

It is not reasonable to suppose that all the fixed Star placed at the same Distance from us; but it is more bable that they are every where interspersed, through vast indefinite Space of the Universe; and the there be as great a Distance betwixt any two of them, as t is betwixt our Sun and the nearest fixed Star. Hen follows, why they appear to us of different Magnitu not because they really are so, but because they are at ferent Distances from us; those that are nearest excel in Brightness and Lustre those that are more remote, give a fainter Light, and appear smaller to the Eye.

The Aftronomers distribute the Stars into several On or Classes; those that are nearest to us, and appear brig to the Eye, are called Stars of the first Magnitude; that are nearest to them in Brightness and Lustre, are co Stars of the second Magnitude; those of the third C are stiled Stars of the third Magnitude; and so on, we come to the Stars of the fixth Magnitude, which the smallest that can be discerned by the naked Eye. T are infinite Numbers of smaller Stars, that can be through Telescopes; but these are not reduced to an the fix Orders, and are only called telescopic Stars. may be here observed, that though the Astronomers ! reduced all the Stars, that are visible to the naked into some one or other of these Classes; yet we are no conclude from thence that all these Stars answer exactly some or other of these Orders; but there may be in rea as many Orders of the Stars as they are in Number, of them appearing of the same Bigness and Lustre

The ancient Astronomers, that they might disting the Stars in regard to their Situation and Position each other, divided the whole starry Firmament into veral Asterisms or Systems of Stars, consisting of those are near to one another. These Asterisms are called of stellations, and are digested into the Forms of some starts. The

Images of formangle, & The starry or that Part interpretary or the fing Creature of the Zine Heave The Configures; 4.

The Conft inty-fix, vi a; Capheus Keeper of harles's Health mada; the gays or the

Virgo mp,

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as Men, Lions, Bears, Serpents, &c. or to the ages of some known things, as of a Crown, a Harp, a magle, &c.

The flarry Firmament was divided by the Ancients into Images or Constellations; twelve of which they placed that Part of the Heavens wherein are the Planes of the metary Orbits; which Part is called the Zodiac, because of the Constellations, placed therein, resemble some ing Creature. The two Regions of the Heavens on each the Todiac, are called the North and South Parts the Heavens.

The Constellations within the Zodiac are, 1. Aries Y, Ram; 2. Taurus &, the Bull; 3. Gemini II, the wins; 4. Cancer 5, the Crab; 5. Leo A, the Lion; Virgo 17, the Virgin; 7. Libra 2, the Balance; 8. who M, the Scorpion; 9. Sagittarius f the Archer; Capricornus ve, the Goat; 11. Aquarius 2, the later bearer; and, 12, Pisces X, the Fishes.

The Constellations on the North-side of the Zodiac are ity-six, viz. the Little Bear: the Great Bear; the Dra; Capheus, a King of Ethiopia; the Greybounds; Bootes;
keeper of the Bear; Mons Menelaus; Berenice's Hair;
beles's Heart; the Northern Crown; Hercules with his bebatching the Dragon; Cerberus; the Harp; the Savan;
eso; the Goose; the Lizard; Cassiopeia; Perseus; Annuala; the Great Triangle; the Little Triangle; Auriga;
squs or the Flying Horse; the Dolphin; the Arrow; the sui; Serpentarius; the Serpent; Sobieski's Shield; Casubardus; Antinous; the Colt; the Lynx; the Little Lion;
d Musca.

The Constellations noted by the Ancients on the south the of the Zodiac, were the Whale, the River Eridanus, a Hare, Orion, the Great Dog, Little Dog, the Ship Argo, that, the Centaur, the Cup, the Crow, the Wolf, the har, the Southern Crow, and the Southern Fish. To the have been lately added the following, viz. The haix, the Crane, the Peacock, Noah's Dove the Indian, a Bird of Paradife, Charles's Oak, the Southern Triangle, a Fly or Bee, the Swallow, the Chamelion, the Flying the Toucan or the American Goofe, the Water-Serpent, at the Sword Fish.

The Ancients placed these particular Constellations or gures in the Heavens, either to commemorate the Deeds

of some great Man, or of some notable Exploit of Acts of else took them from the Fables of their Religion. And the modern Astronomers do still retain them, to at the Consuston that would arise by making new owner they compare the modern Observations with the ones.

Some of the principal Stars have part cular ames them, as Syrius, Arcturus, &c. There are also leveral a that are not reduced into Constellations, and these

called unformed Stars.

Besides the Stars visible to the naked Eye, there is a verear kable Space in the Heavens, called the Galaxy Milky Way; this is a broad Circle of a whitish Hue, Milk, going quite round the whole Heavens, and consist of an infinite Number of small Stars, visible through a lescope, though not discernible by the naked Eye, by rea of their exceeding Faintness; yet, with their Light, a combine to illustrate that Part of the Heavens where the

are, and to cause that shining Whiteness.

The Places of the fixed Stars, or their relative Situations from another, have been carefully observed by As nomers, and digested into Catalogues. The first among Greeks, who reduced the Stars into a Catalogue, was a parcus, who from his own Observations, and of those lived before him, inserted 1022 Stars into his Catalogue about 120 Years before the Christian Æra; this Catalogue as been since enlarged and improved, by several lear Men, to the Number of 3000, of which there are a grand these are all ranked in the Catalogue as Stars the seventh Magnitude.

It may seem strange to some, that there are no more this Number of Stars visible to the naked Eye; for so times, in a clear Night, they seem to be innumerable this is only a Deception of our Sight, arising from twehement Sparkling, while we look upon them consule without reducing them into any Order; for there can see be seen above 1000 Stars in the whole Heavens with maked Eye, at the same Time: and if we should disting view them, we shall not find many but what are instrupen a good celestial Globe.

Although the Number of Stars that can be discerned the naked Eye are so few, yet it is probable there are in

re, which defcopes, rerfed, t Glasses enious D which the d in the plogue ( mber'd 20 Those w ented for 1 ight, muft Vildom ; f If than fr And fince otion wit but vaft le to supp ce the fixe igness or I we a Syft we do roi allest Star merable n

The next relation to tr, to defer thrument, prefented.

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ery where he Power, The Young Man's best Companion. 3 313

me, which are beyond the Reach of our Opticks; for thro' descripes, they appear in vast Multitudes, every where seried, throughout the whole Heavens; and the better Glasses are, the more of them we still discover. The enious Dr. Hook has observed 78 Stars in the Pleiades, which the naked Eye is never able to discern above 7; din the Orion, which has but 80 Stars in the British subgues and some of them telescopical) there has been mber'd 2000 Stars.

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Those who think that all these glorious Bodies were used for no other Purpose, than to give us a little dim whit, must entertain a very slender Idea of the Divine sidom; for we receive more Light from the Moon artification all the Stars put together.

And fince the Planets are subject to the same Laws of soin with our Earth, and some of them not only equal, but vastly exceed it, in Magnitude, it is not unreasonable to suppose, that they are all habitable Worlds. And see the fixed Stars are no ways behind our Sun, either in spess or Lustre; is it not probable, that each of them we a System of Planetary Worlds turning round them, we do round our Sun? and if we ascend as far as the sallest Star we can see, shall we not then discover in-

merable more of the glorious Bodies, which now are algether invisible to us? And so, ad infinitum, thro' the bundless Space of the Universe. What a magnificent a must this raise in us, of the Divine Being! who is try where, and at all Times present, displaying its Disserve Power. Wisdom, and Goodness, among the life.

the Power, Wisdom, and Goodness, amongst all his reatures!

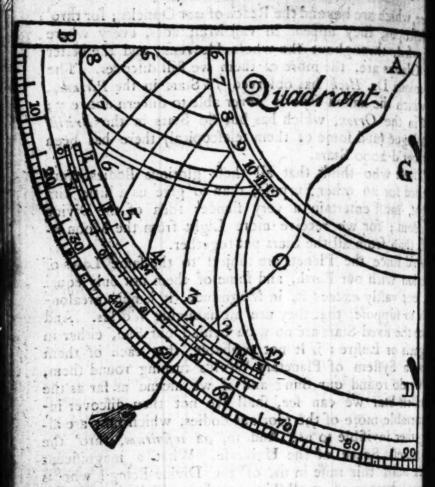
The next Thing I shall proceed to, is to say something relation to the Art of making Dials: But it may be proto, to describe and speak of the Use of a very necessary strument, called a Quadrant, the Shape of which is here presented.

from 10, 40, 60, to 90; thove as an income of the front of the first the 12 to end or Manual for January, I, for Edinary Co., Ard come over the

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This Quadrant, or Quarter of a Circle, is variously use fut on fundry Accounts, viz. to take Heights and Distances, whether accessible or inaccessible: To find the Hour of the Day, &c.

#### Its Description.

The outward Arc is divided into 90 Parts or Degrees, being the fourth Part of the Circle of the Sphere and figur'd from 10, 20, &c. to 90; above which Figures, are Letters fignifying the 12 Calendar Months of the Year, as J. for January, F. for February, &c. And again, over those Letters for the Months, are Lines to know the Hour of the Day: And upon the Line G D, are Sights of thin Brass to be spied through, or for the Sun to shine through, from one total other. Lastly, in the Middle or Point of the Quardiant, viz. at A, is a Line or Thread of Silk fixed, those Holes

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Hole, with a Plummet of Lead at the End of it, and also small Bead in the Middle.

Some of the many Uses of this Instrument are as fol-

### Of Heights.

Suppose you would know the Height of a Steeple, Tower, or Tree; hold up the Quadrant, and view through the Sights the Top of the Steeple, Tower, or Tree, and then the forwards or backwards, till you find the Plummet hangs at Liberty just at 45 Degrees, that is, just in the Middle of the Quadrant; then is the Height of the Steeple, Tower, or Tree, equal to the Distance of your standing-place from the Bottom of the Steeple, adding for the Height that you hold the Quadrant from the Ground.

### To find the Hour of the Day.

Lay the Thread just upon the Day of the Month, then hold it till you slip the small Bead or Pin's-head to rest on one of the 12 o'Clock Lines; then let the Sun shine from the Sight at G to the other at D, the Plummet hanging at liberty, the Bead will rest on the Hour-line of the Day.

## To find the Latitude of a Place nearly.

Hold up the Quadrant, and through the Sightsthereof (or along the Edge) spy, in a clear Star-light Night, the North Pole Star; the Plummet hanging at Liberty, the Thread will rest on the Degrees of Latitude of the Place you are in, or where you take your Observation.

### Of Dialling.

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Dialling is a very ancient Art, even as old as the Time of King Hezekiah, where mention is made of the Dial of Abaz, in the 2d Book of Kings, Chap. xx. ver. 11.

The Gnomen or Substile of a Post or Horizontal Dial, should point directly South, and its Back will be then directly North. The South may be truly known by a good Watch or Clock, just at Noon; for then the Sun is always at the Meridian, and makes just 12 o'Clock; so that knowing the South, it will not be difficult to find the North, it being its Opposite.

P 2

#### To fix a Dial North and South.

Fasten your Board on the Top of a Post, and then with your Compasses make 4, or 5, or 6 Circles, one within the other, from the Center or Middle, where place a large Piperpendicular or upright, and nicely observe, when the Sun shines in the Forenoon, on which Circle the Head of the Pin shadoweth; then there make a Mark; and do the same in the Asternoon, when the Shade of the Pin's-head comes on the same Circle; and from the Midway of the two Marks, draw a Line to the Center, on which place your Meridian or 12 o'Clock Line; so will the Post-dia point North and South.

By the Meridian-line, you may also know when the Moon, or a Star of Magnitude, comes to the South; which when they do, they are always at the highest, whether by

Night or Day.

The following Figure represents a Horizontal-Dial.



First, with a Ruler draw the Line AB, then cross its the Centre with another Line, as the Line CD, which

the paffes, and the or the Arc Foot to 60 the cent coss one are the lace lance must dia cong all on niz.

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In the first egrees and uadrant, b ming of the egrees 55 ot in the ( with the the Circle arks draw rds go ove nd 10 0'C ere you wi the Degre m the 12 C Note, The for 4 and for g and the fame ] hen for th rees, take

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the Meridian or 12 o'Clock Line; and the first Line drawn, on a. A. B., is the 6 o'Clock Line: Then open your Compasses, and place one Foot at the Beginning of the Degrees, or the Arc Edge of your Quadrant, and extend the other Foot to 60 Degrees, and with that Extent place one Foot in the Center of the Dial, at E, where the two first Lines not one another, and draw the Semi-circle ACB.

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Next having the 12 o'Clock Line E C, to know what Diance must be set off from it, for 1 o'Clock and 11 o'Clock sing all one; be directed by the following small Table,

5	20	L	at.
D.	M.	Hou	ırs.
11	55	'n	11
24	55	2	10
38	13	3	5
53	44	4	Ś.
71	0	5	7

In the first Column against 1 Hour and 11, you find 11 egrees and 55 Minutes; which take off the Edge of the undrant, by setting one Foot of the Compasses at the Benning of the Divisions under B, and the other Foot to 11 egrees 55 Minutes; the Compasses so opened, set one of in the Circle at the Bottom of the 12 o'Clock Line. I with the other Foot of the Compasses make a Mark the Circle both towards A and B, and from those two arks draw Lines towards the Center, which you may aftered so over with Ink. Then to make the Hour-lines from and 10 o'Clock, look in the Table for 2 and 10 Hours, ere you will find 24 Degrees and 26 Minutes, which take the Degrees of your Quadrant, and mark as the other make 12 o'Clock Line both ways in the Circle.

for 4 and 8 o'Clock; and the like for 5 and 7 o'Clock; for 5 and 7, 4 and 8, above the 6 o'Clock Line, fet the same Distances as below it.

hen for the Height of the Gnomon or Stile admit 52 sees, take it off the Edge of the Quadrant with the ppasses as before, and with that Extent set one Foot at lom of the 12 o'Clock Line, as before, and extend the

P 3

other

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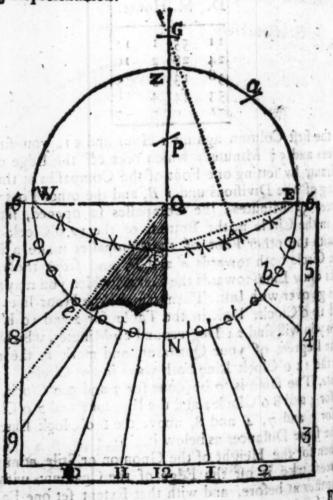
other Foot in the Circle, and make a Mark, and then dre a Line from thence to E the Center, for the upper Edge the Stile, and so raise it directly over the Meridian or a o'Clock Line.

Of Upright Planes.

Those Planes are said to be Erect or Upright which stand perpendicular to the Horizon of the Place, who upper Part pointeth to the Zenith, and their lower Pato the Nadir; and such are the Walls of House Churches, Steeples, &c. against which Dials are conmonly made.

How to draw the Hour Lines on a direct South Plan in the Latitude of 51 Deg. 32 Min. is described by the fo

lowing Representation.



First di West Sou Arthe Me hime veri Second1 28 Minute and fet tha from E to Thirdly Meridian ! Ruler al which is th or the dra E Æ and a Line Z Fourthly arts, as th Fifthly, 1 nd the Rul 10 0 GC. Sixthly, rety one of e Circle o Laftly, I ne Hour-li For the C e Line of e Line 2 really over ownwards e South-pa In making rest Direct r as this eother fac

e Meridian Clock at N de, represent d therefore at Night, guever seen at the North

First draw the Circle Z BW N, representing an upright Wet South Plane; next cross it with the Diameters 2 2 N. The Meridian of 12 o'Clock Line; and W 2 E for the hime vertical Circle, or Hour-line of Six.

Secondly, out of your Line of Chords take 38 Degrees Minutes, (the Compliment of the Latitude of the Place) ad fet that Distance on the Dial-plane from Z to a, and

from E to b, and from N to e.

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Thirdly, Lay a Ruler from W to a, and it will cut the Meridian Z N in the Point P, the Pole of the World; and Ruler also laid from W to b will cut the Meridian in E, nich is the Point thro' which the Equinoctial must pass; the drawing of which, you have 3 Points given, wiz. E and W, and the Center will always be in the Meridin Line Z N.

Fourthly, Divide the Semi-circle E NW into 12 equal

arts, as the Points 000, &c.

Fifthly, Lay a Ruler to 2, and each of these Points 000. of the Ruler will cross the Equinoctial Circle in the Points " &c. dividing that into 12 unequal Parts.

Sixthly, Lay a Ruler to P (the Pole of the World) and many one of the Marks * * & &c. and the Ruler will cross

Lastly, If through the Center 2 and the respective bints | &c. you draw right Lines, they will be

we Hour-lines of an erect South-plane.

for the Gnomon or Stile, take 38 Deg. 28 Min. out of Line of Chords, and fet them from N to e. drawing e Line 2 e for the Axis of the Stile, which must hang neally over the Meridian or Hour-line of 12, and point wnwards to the South-pole, because the Plane beholds

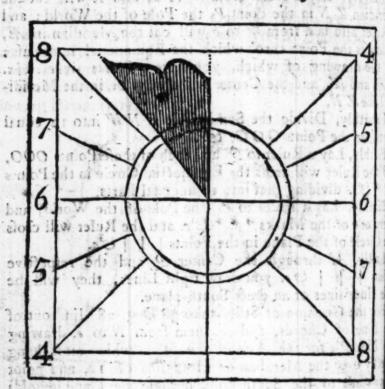
e South-part of the Meridian.

In making this Dial, you make two Dials; for the helt Direct North-dial, is but the Back-side of the South; as this beholdeth the South part of the Meridian, so tother faceth the North-part of the Meridian; and as Meridian Line in the South Dial shews when it is 12 Clock at Noon, fo the Back-fide thereof, viz. the Northk, represents the Hour-line of 12 o'Clock at Midnight, therefore not expressed, nor the Hour-lines of 9, 10, at Night, or of 1, 2, or 3'in the Morning, the Sun besever feen by us above the Horizon at those Hours: So at the North-dial is capable of only receiving the Hours

# 320 The Young Man's best Companion.

of 4, 5, 6, 7, and 8 in the Morning, and 4, 5, 6, 7, and at Night, and (in this Latitude) not all of them neither for it shines not in this Plane, at 8 in the Morning, nor 4 in the Asternoon; but it is best to put them down, as the Figure following, to know how much it is past in the Morning, and what it wants of 5 in the Asternoon.

# An Erect Direct North Dial.



To draw the Hour-lines on an erect direct East or We Plane.—Hour-lines in these Dials must be parallel to a another, and the Dial not have any Center, but drawn follows:

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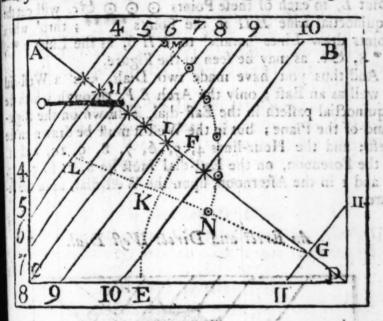
In East

4/5/6/2

Let AB

direct East the Point legrees) de hords, tak tude of th e Line D roportion t the Hour oints in th oint G) f the Hot aw the L ith the Ch K; and ta the Comp it the Arc K L, cutt be the He is Plane. For the dr ompasses (o th the oth

# h East Direct Dial, in the Latitude of 51 Deg. 32 Min.



Let ABCD be the Dial Plane, on which is to be drawn direct East Dial: upon the Point D, if an East Dial, and othe Point C, if a West, with the Radius (or Chord of 60 egrees) describe the obscure Aic E F; then from your hords, take 38 Deg. 28 Min. the Compliment of the Latude of the Place; and fet them from E to F, and draw kline D F quite through the Plane; then that you may oportion the Sile to the Plane, fo that you may bring on the Hours from Sun-rifing to 11 o'Clock, assume two oints in the Line FD, one towards the End D (as the oint G) for the Hour-line of II, and another at H, the Hour-line of 6: And thro' the Points G and H. aw the Lines 11 G 11, and 6 H6; on the Point G, in the Chord of 60 Degrees, describe the obscure Arc a; and taking is Degrees from the Scale of Chords. the Compasses, set one Foot in I, and with the other, the Arc I K, in K; through G and K, draw the Line KL, cutting the Line 6 H 6 in the Point L; so shall L be the Height of the Perpendicular Stile proportioned to. is Plane.

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For the drawing of the Hour-lines, set one Foot of the ompasses (opened to 60 Degrees of the Chords) in L, and the other describe the Arc M N, between the Hour-

P 5

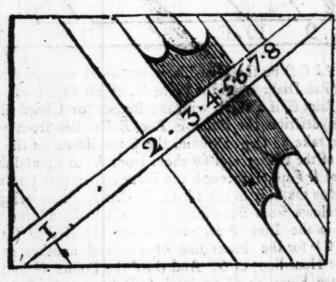
line

line of 6, and the Line GL; which divide into five equa Parts in the Points O O O O and a Ruler laid from the Point L, to each of these Points O O &c. will cut the Equinoctial Line HD in the Points ****; thro' which Points draw Lines parallel to 6 H 6, as the Lines 7 * 7 8 * 8, &c. as may be feen in the Figure.

And thus you have made two Dials, wiz. a West-dia as well as an East; only the Arch EF, through which the Equinoctial passeth in the East-dial, is drawn on the Right hand of the Plane; but in the West it must be drawn on the Left; and the Hour-lines 4, 5, 6, 7, 8, 9, 10, and 11 in the Forenoon, on the East-dial must be 8, 7, 6, 5, 4, 3 2, and 1 in the Afternoon, upon the West-dial, as in the Fi

Bute"

# An Erest and Direct West Dial.



The Stile of the East or West Dials, may be either fraight Pin of the just Length of the Line HO in the oth Figure, which is equal to HL fixt in the Point H, on t Hour-line of 6, and exactly perpendicular to the Plan shewing the Hours by the Shadow of the Apex, or ver near the Top thereof: Or, it may be a Plate of Brass the same Breadth with the Distance of the Hour-lines of and 3; which Plate must be set perpendicular upon Hour-line of 6, and fo it will shew the Hour by the Sh dow of the upper Edge thereof, as in the last Figure.

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Boil I of Gold, thick as S clearest in

Mix fir to fuch a tielf.

Grino

To dr First dra fore menti fingers, th leaf-gold on-cloth fi preffing it brush off th rough Edg black Colo

Let the Oak, one, t hick. Tal Sides, and fire 2 or 3 hem with ooden Peg Heading for lane them mall Plates

# Of Beautifying and colouring Dials,

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TIRST, the Boards are to be brushed over with Linl' feed Oil, thinly ground with Spanish Brown, done over three or four Times (drying between each time) a little hicker each time with the Colour; and this is called Pri ning .

To make the fat Oil for Dials.

Boil Red-lead, and Linfeed-oil, and a little Litherage Gold, (about a Penny worth) together, till almost as hick as Syrup; and when cold, and well fettled, pour the dearest into a Bottle or Bladder for Use.

### The Gold Size for Dials,

Mix fine ground yellow Oaker with the aforefald fat Qil, to such a Consistency, as when used, it may settle smooth of stelf.

#### A Mixture for Hour Lines.

Grind Vermillion or Lamp-black with the fat Oil.

To draw Golden Letters or Figures for the Hours. First draw them with a Pencil dipt in the Gold Size before mentioned; which when so dry as just to stick to your lingers, then with a smooth-edged Pen-knife, shape your leaf-gold to your Mind; take it up with a Piece of Cotm cloth fixt to the End of a Stick, and lay it on the Size, refing it down with the same Cotton, and, when dry, huh off the loose Gold with a Feather, and smooth the hough Edges of the Letters with a Pencil dipped in red or black Colour.

#### Of the Dial Plane.

Let the Board be of the best seasoned, firmest, clearest, lak, one, two, or more Feet square, and about three Inches lick. Take two Boards, and ges them planed on both ides, and then laid in the Sun-fhine, or near a moderate he 2 or 3 Days together; then plane them again, and fix hem with good Joints; and fasten them in gluing with oden Pegs, as I have feen Coopers fix their Pieces of heading for their Casks; and when thus glued and dried, ane them again, and then fasten them, by nailing two hall Plates of Iron or Tim on the Back. If you cannot get

feasoned Wood, but green, then boil it about an Hourin Water, to make it tough, and keep it from warping. It the general, Wood is accounted better than Stone, because

it keeps the Colouring more flaunch or firm.

Before you colour your Dial-plate or Board, fix you Iron Stile of 38 Degrees (which indifferently serves for al England;) and having marked your Hour-lines with Ink and fastened a Nail at the End of each Hour-line, that the Head of each Nail may shadow or direct you to the Cente when it is coloured. And as it may happen that Golde Letters or Figures may decay in a few Years, you may on that account make them with White-lead Paint, pointed with Red in a black Margin.——When your Dial is sinished, and dry, dip a Feather in your Oil, and anoint thinly; for the siner you mix or grind the Colouring with the Oil, the more beautiful it appears, though not to last a real single.

These Hints of Colouring Dials, put me in mind of som other necessary Touches, relating to sundry Mixtures of Colours and dying of Stuffs, &c. collected from Mr. Sal

mon's Polygraphice.

# Of Colours and Dying.

White, are Ceruse, Flake-White, and White-lead.

Blacks, are Lamp-black, burnt Cherry-flones, and of
Ivory burnt.

Reds, are Red-lead, Vermilion, Red-oaker, and India

Take

Greens, are Verdigrease, Verditure, and Sap-green, mad of the Juice of Buck-thorn Berries.

Tellows, are Saffron, yellow-Pink, and Gambogia.

Brown, is Umber burnt.

Gold-Colour, is Orpiment.
Again, Verdigrease, with a little Sup-green, makes good and a bright Green.

Blues, are Ultramarine, Smalt, Indigo, and blue Bice.

#### Of mixing Colours:

Water severally, and dried, and kept in Paper Bags se Wife; except Lamp-black, Saffron, Smalt, Gambogia, as Sap-green. Blue, to with Oil. A light Lead-com

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YellowVinegar.—
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Blue, to compound; temper a little Indigo and Smalt with Oil.

Alight Blue ; mix Smalt and White lead together.

Lead-colour; mix Lamp-black and White-lead together

A Fox colour; is Umber burnt.

Gold-colour, is Orpiment mixt with fat Oil, by a Knife man Earthen Plate, or Gally-tile rather.

To hinder Colours from cracking, put Oil of Walnuts

to them.

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Vinegar.—Or take the yellow Chives in white Lilies and Gum-water mixt for Writing.

Red; Vermilion with Gum water mixt for Writing.

Golden Letters, to write; mix Vermilion and Gum Armoniac with Yolks of Eggs.

## Of Dying Wool, Stuffs, &c. ....

To dye Blue, Take Woad 1 Pound, and mix it with a Pints of boiling Water, and steep Whites in it 24 Hours. To dye Red of a clear Colour, take 60 Pints of Water wherein Bran has been steeped 24 Hours, and, when strained, dissolve 2 Pounds of Allom, and 1 Pound of Tarar; in which Water boil what you have to dye for 2 Hours; then take it out, and boil it in half as much fresh water made of Bran; viz. 30 Pints; to which add Mader 3 Pound, and so perfect the Colour with moderate warmth, without boiling.

Fo dye Green, First make a Yellow by the Direction unterneath; then take 60 Pints of Water wherein Bran hath been soaked, aforesaid; then strain it, let 3 Pound of Allom be dissolved in it, and then boil what you have to dye in

To dye Yellow, take Woad, 2 Pound of the faid Water of Brann, and boil till the Colour is good.

And if you would have the faid Yellow to be Green, put the Stuff into the aforesaid Blue Lye.

To dye a Sad Colour, add Logwood to the Black-Dye

To dye Linen or Thread, &c. light Red: Take Powder of Brazil and Vermilion, of each 1 Ounce, boiled in Allom-water.

To dye Linen or Thread Yellow; diffolve Gambogia

Allom-water, &c.

To frain Skins Blue: Boil Elder-berries, and with the Liquor brush over the Skins, and wring them, then be the Berries in Allom-water, and wet them twice over.

## Of Money.

Copper, Silver, or Gold. Of Copper is made either a copper, Silver, or Gold. Of Copper is made the Fat things and Halfpence. Of Silver, the Pennies, Two-pence Three-pences, Groats, Six-pences, Shillings, Half-crown and Crowns: But there is very little Silver coined below the Six-pence. Of Gold is made the Quarter Guinea, the Half Guinea, the Guinea, and the 5 Guinea Piece: Belief there are Foreign Pieces of Gold that pass, tho' with some Scruple; as the Portugues Moidore, at 27 s. Pieces of 36 each; and others of 31. 12 s. There are also some search; and others of 31. 12 s. There are also some search; and others of 31. 12 s. There are also some search; and others of 31. 12 s. There are also some search; and therefore may be reckoned the best, and sometimes called Angel or Crown Gold; but the olegold or Broad Pieces are mostly alloyed with Copper, which makes them of a reddish Colour.

### Imaginary Money.

We appropriate several Names to Money, of which there is no Coin; as,

chicken why alled Jose	TO THE REAL PROPERTY AND ADDRESS OF THE PARTY
The Pound of	20
The Mark	11
The Noble, or half Mark	06
The Angel	and the same and the same

In England, Accompts are kept in Pounds, Shillings, and Pence Sterling; and their Marks are derived from their Names in Latin, viz. I. for Libra or Pounds, s. for Solid or Shillings, a. for Denarii or Pence, qr. for Quadrante, or Farthings, 4 making a Penny; and expressed or set down thus:

1. 1. d. qr.

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Anding before the Sum denominates the first Number, and the others are known of Course; for after Pounds follows Shillings, and after Shillings succeed Pence, &c. What

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A TABLE, exhibiting at one View the Value of

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any Number of Portugal Pieces of Gold, in Englift Pounds, and Shillings.

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#### EXAMPLE.

First, at 5 d. 3 q. the Pound, what is the Great Hundred? Look in the Table for 5 d 3 q. in the First Column, and against it in the Second, you shall find 2 l. 13 s. 8 d and so much will 112 Pound cost, Again, if a Hundred Weight cost 4 l. 8 s. 8 d. find 4 l. 8 s. 8 d. and against it, in the Column towards the Lest Hand, you will find 9d. 2 q. and so much it is by the Pound.

Note, For every Farthing that one Pound doth cost, reckon Two Shillings and Four Pence, and that is the Price of the Great Hundred.

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Note, 1 Pound and N Hint of Generals, or Things proper to be known and remembered on proper Occasions.

Ream of Paper, 20 Quires, the danter. Quire of Paper, 24 Sheets. Roll of Parchment, 5 Dozen, or 60 Sking. Dicker of Hides, 10 Skins. Powalt or darida, 200 lb. of Gloves, 10 Dozen Pair. Last of Hides, 20 Dickers. Load of 1 imber unhewed, 40 Foot. Chaldron of Coals, 36 Bushels. Hoghead of Wine, 63 Gallons. m of Beer, 54 Gallons. Barrel of Beer, 36 Gallons, Granes and Lemons. to of Ale, 32 Gallons. Gross, 144 or 12 Dozen. Weigh of Cheese, 256 Pounds. ysin a Year, 365, Weeks 52, and Hours 8,66. te in a Pound, 240, Farthing, 960 togaling shood Acre of Land 160 fquare Poles or Perches. haft of Corn or Rape-feed, 10 Quarters. to of Pot-ashes, Cod-fish, White-herrings, Meal, Pitch,

nd Tar, 12 Barrels.

of Flax and Feathers 17 C. of Gun-powder 24 Bards, or 2400 lb. of Wool, 4368 lb.

Jun of Wine, 252 Gallons: Oil of Greenland, 252 Galons; and fweet Oll of Genoa, 236 Gallons.

In in Weight, 20 C. of Iron, &c. but of Lead there is ut 19 C. and a half, called a Fodder or Fother, lodd of Wool, 28 Pounds.

ak of ditto, 364 Pounds. The said alies abred oad of Bricks, 500; and of plain Tiles, 1000.

one of Fish, 8 lb. and of Wool, 14 lb. The same for forfeman's Weight, and also Hay; but Pepper, Cinnaion, and Allom, have but 13 lb. 1 to the Stone. of Glass, 5 Pounds; and a Seam of ditto, 24 Stone.

mis of Hay, 56 Pounds; and a Load of ditto, 39 Truf-

Note, New Hay in June and August, ought to be 60 Pound to the Trus; as per Statute of 2 of William and Mary, 169;

# The Young Man's best Companion

A Cade of Red-Herrings, 500; and of Sprats, 1000. Iron and Shot, 14 lb. to the Stone.

# Barrels of Jundry Commodities. 189 10 mm

Anchovies, 30 lb. A double Barrel, 60 lb. Nuts or Apples, 3 Buthels. Pot-ash or Barilla, 200 lb. White or Black Plates, 300. Candles 10 doz. lb. Salmon or Eeles, 42 Gall. Figs 3 qrs. 14 lb. to 2 C. 1

Raifins, I Cwt. 10 510 Oil 31 Gallons and half. Spanish Tobacco, 2 C 3 C. Gunpowder, 1 C. wt. Soap, 240 lb. Butter, 224 lb. Herrings, 32 Gallons.

Things in Wholefale Trade, bought and fold by the Though

Cuttle-Bones. Oranges and Lemons. Chair Nails. Tacks and Tenter Hooks. Pomegranates and Tazels. Goose Quills and Thimbles. | Slat and Hilling Stones.

Bricks. Clinkers, or Flanders Ti Billets and Leaves of He Barrel Hoops. Squirrel Skins. Pins and small Needles, by the 1000 Dozen.

Things fold and bought at Six Score to the Hundred.

Banks and Barlings, Barrel and Pipe Boards. Bompfpars and Bow-flaves. Canspars and Caprevans. Herrings and Deal Boards. Nails, Eggs, and Cod-fifb,

Cole, Ling, and N foundland-fish, Stock of all forts. Elis of Canvas, and most reign Linens. And, Hoghead Stares

Of Bonds, Bills, Indentures, Letters of Attorney, h and other ufeful Writings.

Precedents of these are very necessary, not only so understanding of them, but to know how to make properly on Occasion. H localba

A Bond from One to One.

NOW all Men by these Presents, that I Am Darmell, of the Parish of Se. Sepulchres, in the of London, Gentleman, am held and firmly bound to

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Note. T resents the years, oug m (a Wi ven in its to off the mellion au at, in bis

intioned.

Most, of the said City of London, Esq; in the Sum of inty Pounds of good and lawful Money of Great Britain, the paid to the said John Melver, or to his certain Attorned his Executors, Administrators, or Assigns; for the Payment whereof, I bind myself, my Heirs, Exempts, and Administrators, firmly by these Presents sealed in my Seal. Dated this twenty-first Day of January, the third Year of the Reign of our Sovereign Lord in the Third, by the Grace of God of Great-Britain, hence, and Ireland, King, Defender of the Faith, and so with, and in the Year of our Lord, One thousand Seven andred and Sixty-three.

The Condition of this Obligation is fuch, That if the love bounden Abraham Darmell, his Heirs, Executors, Administrators, do well and truly pay, or cause to be ad to the above-named John Melver, his Executors, Administrators, or Assigns, the full Sum of twenty five Pounds 1900d and lawful Money of Great Britain, on the twenth Day of August next ensuing the Date hereof, with relawful Interest thereof: Then this Obligation to be void, telle to remain, continue, and be in full Force and

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d to Me Staled and Delivered (being first duly flamped) in the Presence of Gregory Needy, Thomas Trusty.

Abraham Darmell.

Note. The Mark O, in this and the Form subsequent, resents the Seal, nubich in this, and all those in which it wars, ought be affixed; the Person who executes any of m (a Will excepted, concerning which Directions will be min its Place) is, in the Presence of the Witnesses, to be off the Seal (that is the Instrument with which the messon was made) and then taking the Paper or Parches, in his or her Right-hand, is to pronounce these Words, this as my Act and Deed for the Pusposes within assoned.

## A Bill with a Penalty.

K NOW all Men by these Presents, That I Jobs 7 kins of the City of Chichester, in the County of Suffer. Victualler, do acknowledge myfelf indebted to Man Moneyman, of East-Grimstead in the County aforesaid G fier, in the Sum of twenty Pounds of good and lawful M ney of Great Britain, to be paid unto the faid Marie M neyman, his Heirs, Executors, Administrators, or Affigr in or upon the 29th Day of September next ensuing the De hereof, without Fraud or further Delay: For and in Con deration of which Payment well and truly to be made a done, I bind myfelf, my Heirs, Executors, and Administ tors, in the Penal Sum of forty Pounds, of the like law Money, firmly by these Presents: In witness whereof have hereunto fet my Hand and Seal this twenty-fifth D of March, in the Third Year of the Reign of our Son reign King GEORGE, the Third, and in the Year of Lord God, 1763.

Signed, Sealed, and Deliwered in the Presence of Titus Testimony, Andrew Assidavit.

John Jenkins.

# A Short Bill or Note of One's Hand.

NOW all Men by these Presents, That I Peter Pen less, of the Parish of St. Saviour's Southwark, the County of Surrey, Blacksmith, do owe, and own of self to stand indebted to Robert Rich, of the Parish of Andrew, Holborn, in the County of Middlesez, Gent. the just and due Sum of five Pounds, of lawful Money Great Britain, which by these Presents I promise to sunto him the said Robert Rich, at or upon the fixth D of Osober next ensuing the Date hereof: For the true of Osober next ensuing the Date hereof: For the true of omance of which Payment, well and truly to be made and in witness hereof, I have set my Hand to these P fents, this fifth Day of May 1762.

Peter Pennyl

Among Men of Business the following Form is co monly used, and is equally effectual in Law. Sum e receiv

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This Name of doth

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Dunflan,
seknowled brief Greece
County of the Pounce to be paid cutors, Add pay of Fraud or Payment Heirs, E. of twenty these Present Hand

Signed, Signed, Wim Time

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GEORGE

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Note a Words at

The Young Man's best Companion.

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Promise to pay to Mr. Robert Rich, or his Order, the Sum of five Pounds, five Months after Date, for Valereceived, this fifth Day of May 1762, by

Peter Pennyless.

This Note is transferable to another, if Robert Rich writes is Name on the Back thereof; but then if Peter Pennybid doth not pay it, Robert Rich is liable thereto.

A Penal Bill from Two to One.

TNOW all Men by these Presents, That We Laurence Luckless and Peter Pauper, both of the Parish of Saint Dunflan, Stepney, in the County of Middlefex, Weavers, do eknowledge and own ourselves to stand indebted to Gawill Greedy, of the Parish of Saint Olave, Southwark, in the County of Surry, Feltmaker, in the just and due Sum of in Pounds, of good and lawful Money of Great Britain, be paid unto him the faid Gabriel Greedy, his Heirs, Exe miors, Administrators, or Assigns, at-or upon the thirteenth Day of October next ensuing the Date hereof, without and or further Delay; for and in confideration of which hyment well and truly to be made, we do bind our Heirs, Executors, and Administrators, in the penal Sum wenty Pounds of the like lawful Money, firmly by dese Presents. In witness whereof, we have hereunto set or Hands and Seals, this fixteenth Day of May, in the krond Year of the Reign of our Sovereign Lord King GEORGE the Third, &c. and in the Year of our Lord One bousand Seven hundred and fixty-two.

Signed, Sealed, and deliwered in the Presence of Wimbleton Witness, Timothy Testis.

Laur. Luckless. O Peter Pauper. O

Note, That Bills without Penalty are of no more Force or lasting than Book Debts, as they are not sealed; yet they are stumed better Security, because the Party's Hand, if he contends, may be proved against him: But oft-times, on an Advishment of Accounts, it is usual to have the Party's Hand to the Book, which is as valid as the other; but, in my Opinion, there ought to be a Witness to either of them.

Note also, All Obligations must be in English, and the Wirds at length; they may be suited to any Condition, by

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Pennyl

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only altering the Name or Names, Place or Places of About Title or Titles, Sum or Sums of Money, Date, &c.

Every Bond, Letter of Attorney, Indenture, and oth thing to which a Seal is affixed, Wills excepted, must, render it effectual, be stamped with three Sixpenny Stamp

Note, By an Att of the last Sessions of Parliament,

Shilling Stamp more is become necessary.

Thus you may proceed of yourfelf, and fave the Chargof going too far distant to a Scrivener or an Attorne here being no other Charge necessary but the Stamp Paper, and your own Trouble of Writing.

## A Letter of Attorney.

NOW all Men by these Presents, That I Char Careful of Lewes, in the County of Suffex, Ap thecary, (for divers Confiderations and good Causes me her unto moving) have made, ordained, constituted, and a pointed, and by these Presents do make, ordain, constitut and appoint, my trufty Friend William Wagftaff; of Pa fey, in the County aforesaid, Gentleman, my true and laws Attorney, for me, in my Name, and to my Use, to al demand, recover, or receive, of and from A. B. of Rye, the faid County, the Sum of forty Pounds; giving, and these Presents granting to my said Attorney, my sole at full Power and Authority, to take, pursue, and follow su legal Courses, for the Recovery, Receiving, and Obtain ing of the same, as I myself might or could do, were I pe fonally present; and upon the Receipt of the same, Acqui tances, and other sufficient Discharges, for me, and in a Name, to make, fign, feal, and deliver; as also, one or mo Attorney or Attornies under him to substitute or appoint and again at his Pleasure to revoke; and further to d perferin, and execute for me, and in my Name, and fingular Thing or Things, which are or may be a ceffary, touching and concerning the Premises, as full throughly, and intirely, as I the faid Charles Careful, in a own Person, ought or could do in and about the same Ratifying, Allowing and Confirming whatfoever my fa Attorney shall lawfully do, or cause to be done, in a about the Execution of the Premises, by virtue of the Presents: In Witness whereof I have hereunto set I Hand and Seal, the fixth Day of May, in the feco Year of the Reign of our Sovereign Lord Gronge Thi

Third, At. al handre

Ship th bereun traky F or my hwful A to alk, c mourabl and the may cor ney, Pri whatfoer be due, c Smart-m which n be due to his Maje ing and and who Ways and taining, Money, o were I pe and confir

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third, by the Grace of God, King of Great Britain, and in the Year of our Lord One thousand Seven landred and Sixty-two.

A Letter of Attorney by a Seamon.

I NOW all Men by these Presents, That I Timothy A Tarpaulin, Mariner, now belonging to his Majesty's Ship the Rye, for divers good Caufes and Confiderations me bereunto moving, have, and by these Presents do make my maky Friend Henry Hearty, Citizen and Baker of London for my beloved Wife Penelope Tarpaulin] my true and hwful Attorney, for me, and in my Name, and for my Uie, walk, demand, and receive, of and from the Right Homourable the Treasurer or Pay-master of his Majesty's Navy, and the Commissioners of Prize-money, and whom else it may concern, as well all fuch Wages and Pay, Bounty-money, Prize-money, and all other Sum and Sums of Money whatfoever, as now are, and which hereafter shall and may edue, or payable unto me; also all such Pensions, Salaries, mart-money, or all other Money and Things whatfoever, which now are, or at any Time hereafter shall or may ledue to me, for my Service, or otherwise, in any one of his Majesty's Ship or Ships, Frigates or Vessels: Giving and hereby granting, unto the faid Attorney, full and whole Power, to take, purfue, and follow fuch legal Ways and Courses, for the Recovery, Receiving, and Obtiming, and Discharging upon the said Sum or Sums of Money, or any of them, as I myfelf might or could do, were I personally present; and I do hereby ratify, allow. and confirm, all and whatever my Attorney shall lawfully to, or couse to be done, in and about the Execution of the fremises, by virtue of these Presents: In witness whereof, I have hereunto fet my Hand and Seal, this twentysecond Day of March, One thousand Seven hundred and Sixty-two, &c. Timothy Tarpaulin. O

A short Will in Legal Form.

N the Name of God, Amen. I William Weakly, of the City of London, Haberdasher, being very Sick and Weak in [or in perfect Health of] Body, but [or, and] of perfect Mind and Memory, Thanks be given unto God; calling unto Mind the Mortality of my Body, and knowing

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that it is appointed for all Men once to die, do make as ordain this my last Will and Testament, That is to fa principally and first of all, I give and recommend my So into the Hand of Almighty God that gave it, and my Bod I recommend to the Earth, to be buried in decent Chr stian Burial, at the Discretion of my Executors; nothing doubting but at the general Refurrection I shall receive t fame again, by the mighty Power of God. And as touch ing fuch worldly Estate wherewith it has pleased God bless me in this Life, I give, demise, and dispose of t fame in the following Manner and Form:

First, I give and bequeath to Elizabeth, my dearly by loved Wife, the Sum of Five hundred Pounds, of lawfi Money of England, to be raised and levied out of my Estat together with all my Houshold Goods, Debts, and movi

able Effects.

Alfo, I give to my well beloved Daughter Elizabe Weakly, whom I likewise constitute, make, and ordain the fole Executrix of this my last Will and Testament, all as fingular my Lands, Messuages, and Tenements, by h freely to be possessed and enjoyed. And I do hereby a terly difallow, revoke, and difannul all and every oth former Testaments, Wills, Legacies, Bequests, and Ex cutors by me in any ways before named, willed and b queathed; ratifying and confirming this, and no other, be my last Will and Testament. In Witness whereof have hereunto fet my Hand and Seal, this twelfth. Day April, in the Year of our Lord One thousand seven hu dred and Sixty-two.

Signed, sealed, published, pronounced and declared, by the faid William Will. Weakly. Weakly, as bis last Will and Testament, in the Presence of us, who in his Presence, and in the Presence of each other, have bereto subscribed our Names.

Henry Hardy, Samuel Short, William Wortle.

The Testator, after taking off the Seal, must, in Presence of the Witnesses, pronounce these Words, It his and declare this to be my last Will and Testament.

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Be it am W made an earing. ven hun this pref and Teff loving ( Sum of to be pa cutrix, O this Codi Will and ed and co felly and eclared Witness 1 and Sev

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known by the Signin Note, If a Will be already made, and the Person bath no sind to alter it, but to add something more, there may be fixed the following Codicil or Schedule to it, and it will led good in Law, as Part of the Will.

#### A Codicil to a Will.

Be it known to all Men by these Presents, That I Wilam Weakly, of the City of London, Haberdasher, have made and declared my last Will and Testament in Writing. earing Date the twelfth Day of April One thousand Senn hundred Sixty-two. I the faid William Weakly, by his present Codicil, do ratify and confirm my faid last Will and Testament; and do farther give and bequeath unto my bring Cousin and Godson William Weakly, junior, the Sum of fifty Pounds of good and lawful Money of England, who be paid unto him the faid William Weakly, by my Exeoutrix, out of my Estate: And my Will and Meaning is, that this Codicil be adjudged to be a Part and Parcel of my last Will and Testament; and that all Things therein mentiondand contained be faithfully and truly performed, and as fully and amply in every respect, as if the same were so kelared and set down in my said last Will and Testament. Witness my Hand this twentieth Day of April One thouand Seven hundred and Sixty-two.

Signed in the Presence

William Weakly.

A. B. C. D.

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A Deed of Gift.

To all People to whom these Presents shall come, I George Generous do send, Greeting. Know ye, That I the said George Generous of the Parish of Pancras in the County of Middlesex, Brick-maker, for and in consideration of the Love, Good-will, and Affection which I have and do bear towards my loving Sister, Sarab Sorrowful, of the same Parish and County, Widow; have given and granted, and by these Presents do freely give and grant unto the said Sarab Sorrowful, her Heirs, Executors or Administrators, all and singular my Goods and Chattles, now being in my present Dwelling-house in the Parish aforesaid known by the Name of Fisher's Figgary; of which (before the Signing of these Presents) I have delivered her, the said

Sarah Sorrowful, an Inventory signed with my own Hand and bearing even Date, to have and to hold all the said Goods and Chattels in the said Premises or Dwelling house to her the said Sarah Sorrowful, her Heirs, Executors, of Administrators, from henceforth, as her and their proper Goods and Chattels absolutely without any manner of Condition. In Witness whereof, I have hereunto put my Hand and Seal, this Tenth Day of April One thousand Seven hundred and Sixty-two.

Signed, Sealed, and Deli
George Generous.

Signed, Sealed, and Deliwered in the Presence of Daniel Drayton, Aaron Atkins.

Note, This Precedent may be extended to the giving awa of Cattle, Corn, House, or Land, if not Entailed, &c. but the Particulars must be named, &c.

## An Indenture of Apprenticeship.

THIS Indenture Witnesseth, That Richard Reynolds, Son of Robert Reynolds, late of Pemsey in the County of Suffex, hath put himself, and by these Presents doth vo luntarily put himself Apprentice to Charles Carpenter, Citizen and Linen-draper of London, to learn his Art, Trade, or My ftery, and, after the Manner of an Apprentice, to ferve him from the Day of the Date hereof, for and during the full Term of Seven Years next ensuing: During all which Time, he the faid Apprentice his said Master shall faithfully serve, hi Secrets keep, his lawful Commands every where gladly obey. He shall do no Damage to his said Master, nor se it to be done by others, without letting or giving Notice thereof to his faid Master. He shall not waste his said Master's Goods, nor lend them unlawfully to others. He thall not commit Fornication, nor contract Matrimony within the faid Term. At Cards, Dice, or any unlawful Game, he shall not play, whereby his said Master may be damaged With his own Goods, or the Goods of others during the fait Term, without Licence of his faid Master, he shall neithe buy nor sell. He shall not absent himself Day nor Nigh from his said Master's Service without his Leave. haunt Alehouses, Taverns, or Playhouses: But in all Thing behave himself as a faithful Apprentice ought to do, during the faid Term. And the faid Master shall use the utmost of his Endeavours to teach, or cause to be taught and infructed

the faid ffeth, for him mrel, during and eve faid Par In Wit Hands a the Rei of God Lord G Note Peace o in Long uzmerci ries, or Trade, by other Mistress may be

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de said Apprentice in the Trade and Mystery he now profesteth, occupieth, or followeth; and procure or provide
for him the said Apprentice, sufficient Meat, Drink, Apmarel, Washing and Lodging, fitting for an Apprentice,
during the said Term. And for the true Performance of all
and every the said Covenants and Agreements either of the
said Parties binds themselves unto the other by these Presents.
In Witness whereof they have interchangeably put their
Hands and Seals this 16th Day of April, in the Second Year of
the Reign of our Sovereign Lord George III. by the Grace
of God, King of Great Britain, &c. and in the Year of our
Lord God One thousand Seven hundred and Sixty-two.

Note. If an Apprentice be involled before a Justice of the Peace or other proper Officer, (the Chamberlain being such in London) he cannot sue out his Indenture, but upon Proof of unmerciful Usage, Want of Victuals, and other Necessaries, or his Master's being uncapable of teaching him his Irade, or not causing it so to be done at his proper Charge by others. And the same holds good in relation to a Mistress. But there being no Involument, an Indenture may be sued out without shewing Cause, in Cities and Corporations, &c.

A General Release.

NOW all Men by these Presents, That I Peter Peaceable of Hastings, in the County of Sussex, Tobacconift, have remised, released, and for ever quit Claim to William Winter of Rye in the County aforesaid, Fish-Chapman, his Heirs, Executors, and Administrators, of all and all manner of Action and Actions, Suits, Bills, Bonds, Writings, Debts, Dues, Duties, Accompts, Sum and Sums of Money, Leases, Mortgages, Judgements by Confession or otherwise obtained, Executions, Extents, Quarrels, Controversies, Trespasses, Damages and Demands whatsoever, which by Law or Equity, or otherwise soever, I the said Peter Peaceable, against the said William Winter ever had, and which I, my Heirs, Executors or Administrators, shall or may claim, challenge, or demand, for or by Reason, Means, or Colour of any Matter, Cause, or Thing whatsoever, to the Day of the Date of these Presents. In Witness whereof I have hereunto fet my Hand and Seal, this fifteenth Day of April, &c.

Reter Peaceable. O

# 344 The Young Man's best Companion.

The Compleat GARDENER: Or, The Practice of Gardening in all its Branches for the twelve Month of the Year.

## JANUARY.

#### Pleasure-Garden.

ROST is to be expected now, and nothing is fo dan gerous to tender Flower-Roots, and their Shoots fo

Spring.

Ranunculus's, Anemonies, and Tulips will be in danger; cover the Beds to guard them, lay on Peafe firm where they are not come up; but where the Shoot appears, place Hoops with Mats and Cloths upon them. This is the common Practice; but in that excellent Work, The Compleat Body of Gardening, lately published, there is a new Method proposed, and much easier and better. This is to place behind them a Reed-hedge, sloping three Feet forward. A Mat is to be let down from the Top in severe Weather, and taken up in mild. This certainly preserves them, and yet does not draw them weak, or make them tender.

Cover the Beds and Boxes of Seedling-flowers; and take

off the Defence when the Weather is milder.

Clean the Auricula plants, pick off dead Leaves, and scrape away the Surface of the Mould; put fresh Mould in the place of it, and set the Pots up to the Brim in the Mould of a dry Bed, and place behind them a Reed-hedge.

Cover Carnation-plants from Wet, and defend them from

Mice and Sparrows.

#### Kitchen Garden.

Throw up some new Dung in a Heap to heat, that it may be ready to make Hot-beds both for the early Cu-cumbers and Melons in this Part of the Ground, and for raising Seeds of Annuals in the Flower-garden.

Dig up the Ground that is to be fown with the Spring-

crops, that it may lie and mellow.

Nurse the Caulislower Plants kept under Glasses carefully; shut out the Frost, but in the Middle of milder Days let in a little Air; pick off dead Leaves, and gather up the Mould about the Stocks.

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Dig a Carrots Spinach Sorrel a

Make Cauliflo Make a slight Hot-bed in the open Ground for young alletting, and place Hoops over it that it may be covered fery hard Weather.

Plant out Endive for Seed into warm Borders; earth

nd blanch Celery.

Sow a few Beans and Peas, and seek and destroy Snails and other Vermin.

Orchard and Fruit-Garden.

Fruit trees, whether in Orchards, or Espaliers, or against

Walls demand the fame general Management.

Cut out dead Wood and irregular Branches, clean the sumps and Boughs from Moss with a hollow Iron: and mair Espaliers, fastening the Stakes and Poles with Nails and Wire, and tying the Shoots down with Twigs of Oser.

Place Stakes by all new planted Trees; and cut Grafts be ready, laying in the Earth under a warm Wall.

#### FEBRUARY.

Pleasure-Garden.

Make Hot-beds for annual Flowers with the Dung laid p for that Purpose, and fow them upon a good Thick-

he's of Mould, laid regularly over the Dung.

Transplant perennial Flowers and hardy Shrubs, Canterlary Bells, Lilacs, and the like. Break up and new lay the Gravel Walks. Weed, rake, and clean the Borders, and where the Box of the Edging is decayed, make it up with a fresh Plantation.

Sow Auricula and Polyanthus Seeds in Boxes; these hould be made of rough Boards six Inches deep, with Holes at the Bottom for the running off of Water; they must be filled with light Mould, and the Seeds scattered thinly over the Surface, then some more Mould must be street over them a quarter of an Inch thick, and they must be set where they may enjoy the Morning-sun.

Plant out Carnations into Pots for slowering.

Kitchen-Garden.

Dig and level Beds for fowing Radishes and Onions, Carrots and Parsneps; and Dutch Lettuce, Leeks and Spinach should also be sown now: also Beets, Salsafy, Sorrel and Marygolds, with any other of the hardy Kinds.

Make up the Hot-beds for early Cucumbers, and fow

Cauliflower-feeds and fome others.

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Plant Beans and fow Pease; the best way in these uses. Things is to sow a new Crop every Fortnight, that if or succeeds and another fails, as will often be the Case, the may still be a constant Supply at the due Season for a Table. Plant Kidney-beans upon a Hot-bed for an ear Crop. The Dwarf white and Battersey, Bean are the besorts. They must have Air in the Middle of mild Dawhen they are up, and once in two Days they must gently watered.

Transplant Cabbages, plant out Silefia and Cos-Letter from the Beds where they grew in Winter; and plant Po

tatoes and Jerusalem Artichokes.

#### Orchard and Fruit-Garden.

Most kinds of Trees may now be pruned though it better to do it to the Generality in Autumn; whatever has been omitted at that Season in this Article must be do now, the hardiest Kinds being pruned first, and such are more tender at the latter End of the Month, who there will be little Danger of their suffering from the Frosts in the wounded Part.

Transplant Fruit-trees to Places where they are wan ed; opening a large Hole, settling the Earth carefull about their Roots, and nailing them at once to the Wal or fastening them up to strong Stakes. Nail up the ter derer Trees with Care, and uncover the Fig-trees by degrees, which have been protected from Frost by Mat Sow the Kernels of Apples and Pears, and the Stones of Plumbs, for Stocks, and keep off Birds that eat the But of Fruit trees.

#### MARCH.

Pleasure-Garden.

Watch the Beds of tender Flowers, and throw Ma over them supported by Hoops in hard Weather.

Continue transplanting all the hardy perennial fibrous rooted Flowers, Sweet-williams, Golden-rods, and the

Dig up the Earth with a Shovel about those which were planted in Autumn, and clean the Ground between them.

All the Pots of flowering Plants must now be dressed Pick off dead Leaves, renew the Earth at the Top, at put fresh in the Place, then give them a gentle Watern and take terin

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and set them in their Places for Flowering. In doing this take care the Roots are not wounded, and repeat the Watering once in Three Days.

The third Week in March is the Time to fow Sweetpeafe, Poppies, Catchflies, and all the hardy annual Plants.

The last Week is proper for transplanting Evergreens; and for this Purpose a showery Day should be chosen. New Hot-beds must be made to receive the Seedlings of annual Flowers raised in the former.

#### Kitchen-Garden.

Sow in the Beds of the Kitchen-garden fome Carrots, and also the large Pease, Rouncevals and Grey.

In better Ground fow Cabbages and Savoys, also Carrots and Parsneps for a second Crop, and towards the End of the Month put in a large Parcel of Beans and Pease,

Sow Parsley and plant Mint.

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Sow Cos and Imperial Lettuce; and transplant the finer Kinds.

In the Beginning of the Month fow Dutch Parsley for the Roots.

The last Week take the Advantage of Time or the dry Days and make Asparagus-beds.

Clear up the Artichoke Roots, slip off the weakest, and plant them out for a new Crop, leaving four from each good Root to bear; and from such as are weaker two.

Dig up a warm Border, and fow fome French Beans. Let them have a dry Soil; and give them no Water till they appear.

#### Orchard and Fruit-Garden.

The Grafts which were cut off early and laid in the Ground to be ready for Use, are now to be brought in a Service, those of the earliest Kinds are to be used first, and the Apple last of all.

This done, let the Gardener look to the Stocks that were inoculated the last Year, and take off their Heads. A Hand's Breadth should be lest on above the Place: This holds the Bud secure by tying to it, and the Sap rises more freely for its Nourishment.

The Fruit-trees that were planted last October must be headed; and they should be cut down to almost four Eyes. Some leave only three, but four is much better, the Sap wiss more freely.

A.P.R.IL

#### APRIL.

Pleasure-Garden.

Tie up the Stalks of tall Flowers to Sticks, cut thele two Foot long, thrust them eight Inches into the Ground, and let them be hid amongst the Leaves.

Clean and rake the Ground between them.

Take off the Slips of Auriculas, and plant them out carefully for an Increase. Transplant perennial Flowers and Evergreens as in the former Months; and take up the Roots of Colchicams and other autumnal bulbous Plants.

Sow French Honeysuckles, Wallflowers, and other hardy Plants upon the natural Ground; and the tenderer Kinds on Hot-beds. Transplant those sown last Month into the second Hot-beds. Plant some Tuberose in a moderate Hot-bed, and sow Carnations and Pinks on the natural Ground on open Borders.

Kitchen-Garden.

Plant the large Crop of French Beans; and chuse for them a warm dry Border. Plant Cuttings of Sage and other aromatic Plants. Sow Marrowsat-pease, and plant some Beans for a late Crop.

Sow Thyme, Sweet-marjoram, and Savory.

Prepare Dung for making Ridges to receive the Cucumber and Melon Plants designed for Bell or Handglasses.

Sow young Salleting once in ten Days; and fow some

Cos and Silefia Lettuces.

The Seeds of all Kinds being in the Ground, look to the growing Crops. Clear away the Weeds every where among them; and dig up the Earth between the Rows of Beans, Peafe, and all other Kinds that are planted at Distances. This gives them a strong Growth, and brings them much sooner to Persection than can be done by any other Method.

Draw up the Mould to the Stalks of the Cabbages and Cauliflower Plants; and in cold Nights cover the Glaffes

over the early Cucumbers and Melons.

Orebard and Fruit-Garden.

Look to the Fruit-trees against Walls and Espaliers. Take away all foreright Shoots, and train such as nie kindly. Thin many m the bette Water

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Water large gro Thin Apricots upon the Trees, for there are usually many more than can ripen; and the sooner this is done, the better the others succeed.

Water new-planted Trees.

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Plant Cuttings of Vines, and look over the grown ones. Nip off improper Shoots. When two rife from the fame Eye, always take off the weakest.

Weed Strawberry-beds; cut off the Strings; stir the Earth between them; and once in three Days water them.

Dig up the Earth in the Borders near Fruit-trees. Never plant any large Kinds of Flowers or Kitchen Things upon them: and it is better if nothing be fown or planted on these Borders; they all starve the Fruit.

# MAY.

# Pleasure-Garden.

Observe when the Leaves of Sowbreads are decayed, and take up the Roots, laying them carefully by till the Time of Planting.

Take up the Hyacinth-roots which have done flowering, and lay them fideways in a Bed of dry rich Mould, leaving the Stems and Leaves out to die away; this Practice greatly frengthens the Roots.

Roll the Gravel-walks carefully and frequently, and keep

the Grass clean mow'd.

Clean all the Borders from Weeds; take of all flraggling Branches from the large flowering Plants, and train them up in a handsome Shape.

Plant out French and African Marygolds, with other Autumnals from the Hot-beds the last Week of this Month,

thuning a cloudy warm Day.

Tie up the Stalks of Carnations. Plant Cuttings of the Lychnis's and Lychnideas, and sow the small Annuals Candy-tust and Venus Looking-glass in the open Ground.

Pot the tender Annuals as Balsams, Amaranths, and the like, and set them in a Hot-bed-Frame till Summer is more advanced for planting them in the open Ground.

#### Kitchen-Garden.

Water once in two Days the Peafe, Beans, and other large growing Plants.

Destroy

Destroy the Weeds in all Parts of the Grounds and di up the Earth between the Rows and about the Stems of a

Jarge Kinds.

Sow small Salletting once in ten Days, as in the forme Month; and at the same time chuse a warm Border, an sow some Purslain; sow also Endive, and plant Beans an Pease for a very late Crop; and French Beans to succeed the others. The great Care in this kind is to have the several Products fresh and young throughout the Season.

Chuse a moist Day, and an Hour before Sunset plan out some Savoys, Cabbages, and red Cabbage, draw th Earth carefully up to their Stems, and give them a fer

careful Waterings.

# Orchard and Fruit-Garden.

If any fresh Shoots have sprouted upon the Fruit-tree in Espaliers or against Walls, nip them off, and train the proper ones to the Wall or Poles at due Distances and in

regular manner.

Look over the Vines and stop every Shoot that has Fru upon it, to three Eyes beyond the Fruit. Then train the Branches regularly to the Wall, and let such as are designe for next Year's Fruiting, grow some time longer; the Leaves will give a proper Shade to the Fruit.

Water the new-planted Trees, and keep the Border about the old ones clear; and finally pick off Snails an

other Vermin.

# TUNE.

# Pleasure-Garden.

Chuse the Evening of a mild showery Day, and plan out into the open Ground the tender Annuals hither kept in Pots in the Hot-bed Frame; they must be careful loosen'd from the Sides of the Pot, and shaken out wit all the Mould about them: a large Hole must be open for each; they must be placed upright in it, and when set the led in the Ground, by a gentle Watering, must be tied a to Sticks.

Let Pinks, Carnations, and Sweet-williams be laid the Month for an Increase. Let the Layers be covered lightly, and watered every other Day a little at a time.

The Spring Flowers being now over, and their Leave faded, the Roots must be taken up and laid by for planting

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Tulip decay;

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Endive in this the the fame ( Crop. P naked Slu

Repeat and Espal train prop wanted. at four In The Fruit Year.

Inocular cloudy Eve Snails and again at a proper Season. Snow-drops, Winter-aconite

and the like, are to be thus managed.

The Hyacinth Roots, laid flat in the Ground, must now be taken up, the dead Leaves nipped off, and the Mould; and when clean they must be laid upon a Mat in an airy Room to harden, and then laid by.

Tulip Roots must now be taken up also as the Leaves decay; and the like Method must be followed with Ane-

monies and Ranunculus's.

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Cut the Cups or Pods of the Carnations that are near blowing, in three or four Places, that they may blow regularly.

Inoculate some of the fine Kinds of Roses.

# Kitchen-Garden.

Transplant the Cauliflower Plants sown in May. Give them a rich Bed and frequent Waterings.

Plant out Thyme and other favoury Plants fown before,

and in the fame manner shade and water them.

Take the Advantage of some cloudy Weather to sow Turneps; and if there be no Showers, water the Ground once in two Days.

Sow Broccoli upon a rich warm Border, and plant out Celery for blanching. This must be planted in Trenches a Foot and a half deep, and the Plants must be set half a

Foot afunder in the Rows.

Endive should also be planted out for blanching; but in this the Plants should be set sisteen Inches asunder, and the same time some Endive-seed must be sown for a second Crop. Pick up Snails; and in damp Evenings kill the naked Slugs.

# Orchard and Fruit-Garden.

Repeat the taking off of foreright Shoots upon Wall and Espalier-trees, which we directed last Month; and train proper Branches to their Situation, where they are wanted. Once again thin the Wall-Fruit; leave Nectarines at four Inches Distance, and Peaches at five; none nearer: The Fruit will be finer and the Tree stronger for next Year.

Inoculate the Apricots, and chuse for this Operation a cloudy Evening. Water new-planted Trees, and pick up

Snails and Vermin.

# Pleasure-Garden.

Roll the Gravel frequently, and mow the Grass.

Clip Box Edgings; cut and trim Hedges; and look over all the Borders, clearing them from Weeds, and flirring up the Mould between the Plants.

Inoculate Roses and Jasmines of all the Kinds that require this Propagation; and any of the other flowering

Shrubs.

Take up the Roots of Fritillaries and Maragons, and others of this Sort that are past flowering some time.

Gather the Seeds of Flowers you design to propagate, and lay them upon a Shelf in an airy Room in the Pods. When they are well hardened tie them up in Paper-bags, and do not take them out of the Pods till they are to be fown.

Lay Pinks and Sweet-williams, as the former, in Earth, Cut down the Stalks of those Plants which have done flowering, and which you do not keep for Seed; and the up those now coming into Flower to Sticks, as we directed for the earlier Kinds.

Borders, to fland the Winter and flower early next Year.

#### Kitchen-Garden.

Sow a Crop of French Beans to come in late, when they will be very acceptable.

Clear all the Ground from Weeds.

Dig between the Rows of Beans and Peafe, mow the Ground also about the Artichokes and among the Cabbage Kinds.

Water the Crops in dry Weather.

Spinach-seed will be ready for gathering now, as allothat of the Welch Onion, and some others; take them carefully off, and dry them in the Shade.

Take up large Onions, and spread them upon Mats to

dry in the Winter.

Clear away the Stalks of Beans and Peafe that have done bearing.

Watch the Melons as they ripen, and give them very little Water.

Water Cucumbers more freely.

Inoculate Take off

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#### Orchard and Fruit-Garden.

Inoculate Peaches and Nectarines.

Take off all Foreright Shoots in the Espalier and Wall-

fruit Trees.

Hang Vials of Honey and Water upon the Fruit-trees, and look carefully for Snails. Keep the Borders where the Fruit-trees stand clear from Weeds, and stir the Earth This will greatly assist the Fruit in ripening. about them.

Look to the Fruit-trees that have been grafted and budded the last Season. See that there are no Shoots from the stocks. Wherever these rise take them off, for they will mb the intended Growth of its Nourishment.

Look carefully to the new-planted Trees; water them often, and whatever Shoots, they properly make, fasten to

the Wall or Espalier.

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Repeat the Care of the Vines, take off improper Shoots, and nail any that are loofe to the Wall. Let no Weeds rife in the Ground about them, for they will exhaust the Nourishment and impoverish the Fruit.

# AUGUST.

# Pleasure-Garden.

See whether the Layers of Sweet-williams, Carnations, and the like, be rooted; transplant such as are, and give frequent gentle Waterings to the others to promote it.

Dig up a mellow Border and draw Lines at five Inches Distance lengthwise and across; in the Center of these quares plant the feedling Polyanthus's, one in each Square.

In the same manner plant out the seedling Auriculas. hade them till they have taken Root, and water them once in twenty-four Hours.

Cut down the Stalks of Plants that have done flowering.

ave the Seeds you want as they ripen.

Water the tender Annuals every Evening.

Sow Anemonies and Ranunculus's, as also Fritillary,

Tulip and Narciffus Seed.

Dig up a Border for early Tulip-roots and others for lyacinths, Anemonies, and Ranunculus's. Sow Annuals o fland thro' the Winter, and shift Auriculas into fresh Pots.

Kitchen-

Sow some Spinage upon a rich Border, and on such and ther sow Onions. Those two Crops will live through the Winter, unless very severe, and be valuable in Spring The second Week in August sow Cabbage-seed of the early Kinds; and a Week after that sow Caulislower seed This will afford the Plants that are to be nursed up unde Bell-glasses in the Winter. Some of these may also be ventured in a very well desended Situation open. The law Week of this Month sow another Crop, to supply the Place of these in case of Accidents; for if the Season be very severe, they may be lost, and if very mild, they will run to Seed in Spring. These last Crops must be desended by a Hot-bed Frame, and they will stand out and supply Desiciencies.

Sow Lettuces, the Cabbage and brown Dutch Kinds i

a warm and well sheltered Piece of Ground.

Transplant some of the Lettuces sown earlier in warn

and well sheltered Borders.

Take up Garlick, and spread it on a Mat to harden; if the same manner take up Onions and Rocambole; and, a the latter End of the Month, Chalots.

# Orchard and Fruit-Garden.

Watch the Fruit on your Wall-trees, and keep off De vourers, of which there are numberless Kinds now swarm ing about them. Shoot all Birds, pick up Snails, and hang Bottles of sweet Water for Flies and Wasps.

Fasten loose Branches, and gather the Fruit carefully

it ripens.

Once more go round the Vines, and pull off those trailing Branches so very luxuriantly produced at this time. See that the Fruit is not shaded by loose Branches, an keep the Borders clear of Weeds. This tends more that is imagined to the well ripening of the Fruit.

#### SEPTEMBER.

# Pleafure-Garden.

A new kind of Work begins this Month; which is, proparing for the next Season. Tear up the Annuals that has done flowering, and cut down such Perennials as are pa

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Borders.

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heir Beauty, bring in other Perennials from the Nurfery-

Take up the Box-edgings where they are outgrown

their proper Size, and part and plant them fresh.

Plant Tulips and other Flower Roots.

Slip Polyanthus's, and place them in rich shady Borders's Sow the Seeds of Flower-de-luce and Crown Imperial, as also of Auricula's and Polyanthus's, according to the Method we delivered before.

Also part the Roots of Flower-de-luces, Piony, and others of these Kinds. In the last Week transplant hardy sowering Shrubs, and they will be strong next Summer.

#### Kitchen-Garden.

Sow Lettuces of various Kinds, Silefia, Cos and Dutch's and when they come up shelter them carefully. The common Practice is to shelter them under Hand-glasses but they will thrive better under a sloping Reed-hedge, such as we described before.

Make up fresh warm Beds with the Dung that has lain a Month in the Heap. Plant the Spawn in these Beds upon Pasture-Mould, the same they were found in; and raise the

Top of the Bed to a Ridge, to throw off Wet.

Look to the Turnep beds and thin them, leave the Turneps at fix Inches Diffance.

Weed the Spinage, Onions, and other new fown Plants.

Transplant Sage, Lavender, and Sweet Plants. Earth

up the Celery as it grows up in Height.

Sow young Salletting upon warm and well sheltered

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Clean Asparagus Beds in this manner: Cut down the Stalks and pare the Earth off the Surface of the Alleys, throw this upon the Beds half an Inch thick, and sprinkle over it a little Dung from an old Melon-bed.

Dig up the Ground where Summer Crops have ripen'd; and lay it in Ridges for the Winter. These should be disposed East and West, and turned once in two Months, they

have thus the Advantage of a Fallow.

Plant some Beans and sow some Pease on warm and wellheltered Borders, to stand out the Winter.

#### Orchard and Fruit-Garden.

The Fruit must now be gathered with Care every Day, and the best Time is an Hour after Sun-rise. Then

it should be laid in a cool Place till used. Such as is gathered in the Middle of the Day is always slabby.

Keep Birds from the Grapes, for as they now begin to

ripen, they will be in continual Danger.

Transplant Goosberries and Currants, and plant Straw. berries and Rasberries; they will be rooted before Winter, and flourish the succeeding Season.

# OCTOBER.

Pleasure-Garden.

Let all the bulbous Roots for Spring-flowering be put into the Ground. Narcissus, Maragon, Tulips, and such Ranunculus's and Anemonies as were not planted sooner.

Transplant Columbines, Monks-hood, and all Kinds of librous-rooted Perennials.

Place the Auriculas and Carnations that are in Pots under

Shelter.

Some lay the Pots on one Side, but that spoils the Bud for next Year's Flowering. The best way is by means of a sloping Reed-hedge. Dig up a dry Border, and if not dry enough naturally, dig in some Sand. In this set the Pots up to the Brim. Place the Reed hedge sloping behind them, and fasten a Mat to its Top that may be let down in bad Weather.

Take off the dead Leaves of the Auriculas before they

are thus planted.

Bring into the Garden flowering Shrubs wherever they are wanted, and at the End of the Month prune some of the hardier Kinds.

# Kitchen-Garden.

Plant out the Cauliflower-plants where they are to be sheltered; and it will be proper to plant two for each Glass, where that Method is used, for fear of one failing.

Sow another Crop of Pease, and plant more Beans; chuse for these a dry Spot and well sheltered from the cold

Winds of Winter.

Transplant the Lettuces sowed last Month, where they can be defended by a Reed-hedge, or under Walls.

Transplant Cabbage-plants and Coleworts where they are to remain.

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Look ov thered in S a Condition hardier Kir

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Dig up Carrets for and fee the Take great Care of the Cauliflower-plants fown early in Summer; they now begin to shew their Heads, break in the Leaves upon them to keep off the Sun and Rain; it will both harden and whiten them.

#### Orchard and Fruit-Garden.

Prune the Peach and Nectarine Trees and the Vines. This is a very useful Practice, for it strengthens the Buds for Spring.

Cut Grapes for preferving, with a Joint of the Vine to

each Bunch.

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Gather Fruits for Winter-keeping as they ripen. Transplant all Garden-trees for flowering; prune Currantpulses, and preserve the Stones of Fruit for sowing.

# NOVEMBER.

#### Pleasure-Garden.

Throw together a good Heap of Pasture-ground, with the Turf among it, to rot for Mould for the Borders.

Transplant Honeysuckles and Spireas, with other hardy

Howering Shrubs.

Rake over the Beds of feedling Flowers, and firew fome

Pea-straw over them to keep out the Frost.

Cut down the Stems of Perennials which have done flowering; pull up Annuals that, are spent, and rake and clear the Ground.

Place Hoops over the Beds of Ranunculus's and Anemonies, and lay Mats or Cloths in Readiness to draw over

them, in case of hard Rains or Frost.

Clean up the Borders in all Parts of the Garden, and take care to destroy not only Weeds, but all Kinds of Moss.

Look over the Seeds of those Flowers which were gathered in Summer. See they keep dry and sweet, and in a Condition of Growth, and dig a Border or two for the hardier Kinds.

# Kitchen-Garden.

Weed the Crops of Spinage and such other Kinds as were sown late, for the wild Growth will else smother and starve the Crop.

Dig up a Border under a warm Wall, and fow fome Carrets for Spring; fow Radishes in such another Place, and see the Ground be well and deep dug for both. Turn the

the Mould that was trenched and laid up for fallowing this destroys Weeds, and prepares the Soil to be inriche

by the Air.

Prepare some Hot-beds for Salletting; cover them for Inches with Mould, and fow upon them fome Lettuces and the common small Salletting, Mustard, Rape, Cresses and Radish.

Plant another Crop of Beans; and fow more Peafe for

Trench the Ground between the Artichokes, and throw a thick Ridge of Earth over the Roots. This will bre ferve them from the Frost, and prevent their shooting an improper Time.

Make a Hot-bed for forc'd Afparagus.

Take up Carrots and Parsnips, and lay them in Sand to be ready for Use. Give Air at Times to Plants unde Hand-glasses and in Hot-beds, or they will suffer as muc by want of that, as they would have done by the Froft.

Orchard and Fruit-Garden.

Stake up all Trees planted for Standards, or the Wind will rock them at the Bottom, and the Frost will be let if and deftroy them.

Throw a good Quantity of Peafe-straw about them, and lay on it a good Quantity of Brickbats or Pebbles to kee it fast; this will mellow the Ground, and keep out the

Froft.

Continue to prune Wall-fruit Trees, and prune at thi time also the Apple and Pear Kinds. Pull off the late Fruit of Figs, it would decay and rot the Branches.

# DECEMBER.

# Pleasure-Garden.

Draw the Mats and Cloths over the Ranunculus and Anemony-beds in fevere Weather, whether Frost or cold Rains; but give them Air in the Middle of every tolerable Day, and as foon as possible uncover them all Day; bu draw on the Mats against Night.

Throw up the Earth where flowering Shrubs are to be

planted in Spring; and once in a Fortnight turn it.

Dig up the Borders that are to have Flower-roots plant ed in them in the Spring, and give them the Advantage of a Fallow, by throwing up the Ground in a Ridge Scatter ove bed, and a

Look ov away all d any crofs e the Air can

Sift a Q Roots of p down, and whole an A always plea

Plant Ca with great Mould very bage and S Days, and the Groun about the F make it in w Nature.

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scatter over it a very little rotten Dung from a Melon-

led, and after this turn it twice during the Winter.

Look over the flowering Shrubs and prune them. Cut away all dead Wood, shorten luxuriant Branches, and if any cross each other, take away one. Leave them so that the Air can have free Passage between them.

Sift a Quarter of an Inch of good fresh Mould over the Roots of perennial Flowers whose Stalks have been cut down, and then rake over the Borders. This will give the whole an Air of Culture and good Management, which is

always pleafing.

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#### Kitchen-Garden.

Plant Cabbage and Savoys for Seed. This is to be done with great Care; dig up a dry Border, and break the Mould very well; then take up some of the stoutest Cabbage and Savoy Plants; hang them up by the Stalks five Days, and then plant them half way of the Stalk into the Ground, draw up a good Quantity of the Mould about the Part of the Stalk that is out of the Ground, and make it into a kind of Hill round each; then leave them to Nature.

Sow another Crop of Peale, and plant another Parcel of Beans to take their Chance for succeeding the others.

Make another Hot-bed for Asparagus, to yield a Supply when the former is exhausted. Continue to earth up Celery, and cover some Endive with a good Quantity of Pease-straw, as it is growing, that you may take it up when wanted, which otherwise the Frost will prevent.

# Orchard and Fruit-Garden.

Prepare for planting Trees where they will be wanted in Spring, by digging the Ground deep, and turning it well now in the Places where they are to stand.

Scatter over the Borders where the Fruit-trees are planted some fresh Mould, and some old Dung, and in a mild

Day dig it in with a strong three-pronged Fork.

Look over the Orchard-trees, and cut away superfluous and dead Wood. Let the Branches stand clear of one another, that the Air may get between; and the Fruit will be bester flavour'd.

This is the Management of old Trees, and new planted ones are to be preserved by covering the Ground at their Roots.

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# Family's Best Companion

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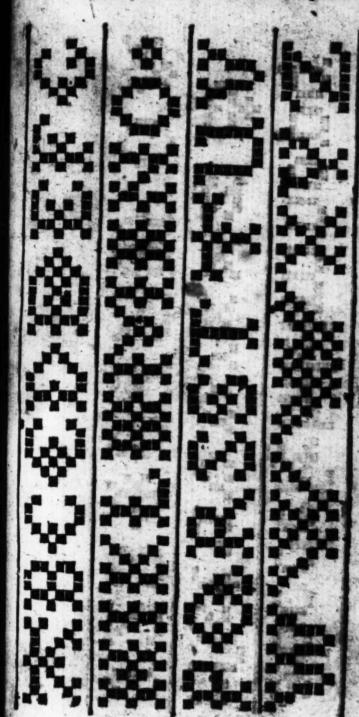
# INSTRUCTIONS

For Marking on Linen; how to Pickle and Preserve; to make divers Sorts of Wine of our English Product; together with man excellent and approved Medicines, Salves &c. necessary in all Families.

A S many Things have been spoken to for the Information of the younger Sort of the Male-kind, so may not be amiss to say some small Matter in relation to the Instruction and Benefit of the Female-kind. And first,

# Of Marking.

This is indiffentibly necessary and useful for the training up the younger Sort of the Female kind to the Needle, being introductory to all the various and sundry Sorts of Needle-work pertaining to that Sex: Therefore I have so down the Alphabet in Capitals or Great Letters, and Smallikewise the Figures, that Girls or Young Women, by one Practice, may soon attain to Perfection in Marking a Lines. The Marking Copies are as follows:



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Give the Pepper, lor drain them, afterwards Pickle.

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Of Pickling, Preferving, Candying, &c.

To pickle Cucumbers.

Water, Vinegar, Salt, Fennel-Tops, some Dill-Tops, and a little Mace; make it sharp enough to the Taste; then will it a while; then take it off, and let it stand till cold; then put in the Cucumbers, and stop them down close, and within a Week they will be sit to eat.

To pitkle Cucumbers green.

Take two Quarts of Verjuice or Vinegar, and a Gallon of fair Water, a Pint of Bay-falt, a Handful of Green Fendlor Dill; boil it a little, and, when cold, put it into a larrel, and then put the Cucumbers to the Pickle, and you may keep them all the Year.

To pickle French Beans.

Take them while young, and cut off the Stalks; then ake good Vinegar, and boil it with Pepper and Salt; asson it to your Palate, and let it stand 'till cold; then take be Beans, and put them into a stone Jar, placing Dill beween the-Layers, and then put in the Pickle, and cover them close for three Weeks; then take the Pickle, and boil tagain, and put it to the Beans boiling hot; cover them close, and, when cold, they will be fit to eat.

Or French Beans may be pickled thus: Take your Beans and string them, boil them tender, then take them off, and by them stand 'till cold; then put them into Pickle of Vine-

gr, Pepper, Salt, Cloves, Mace, and a little Ginger.

Give them one or two Walms with Vinegar, Salt, whole Pepper, long Mace, and a little Lemon peel in Pieces; then drain them, and let the Buds and Liquor cool separately; afterwards put them into a Jar, and cover them with your likele.

To pickle Walnuts to eat like Mangoes:

Take green Walouts before the Shell is grown to any Hardness in them; pick them from the Stalks, and put them into cold Water, and set them on a gentle Pire 'till the outward Skin begins to peel off; then with coarse Cloths the it off; then put them into a Jar, and put Water and salt therein, shifting it once a Day for 10 Days, 'till the litterness and Discolouring of the Water be gone; then take R 2

a good Quantity of Mustard-seed, which beat up with Vinegar, 'till it becomes coarse Mustard; then take some Cloves of Garlic, some Ginger, and a little beaten Cloves and Mace; make a Hole in each Nut, and put in a little of this; then take White-wine Vinegar, and boil them together, which put to the Nuts boiling hot, with some Pepper, Ginger, Cloves, and Mace, as also some of the Mustard and Garlic, which keep close stopped for Use.

To pickle Mushrooms.

First blanch them over the Crowns, and barb them be neath; then put them into a Pan of boiling Water, then take them forth, and let them drain; when they are cold, put them into your Jar or Glass, and put to them Cloves Mace, Ginger, Nutmeg, and whole Pepper; then take Whitewine, a little Vinegar, and Salt: So pour the Liquor into the Mushrooms, and stop them close for Use.

To pickle any fort of Flowers, for Salads, as Clove-Gilly

Flowers, &c.

Put them into a Gally pot, with as much Sugar as they weigh; fill them with Wine Vinegar: To a Pint of Vinegar, a Pound of Sugar.

To pickle Samphire, Broom-buds, Ashen-keys, Purstain, &c.

Take Samphire, and pick the Branches from the dead Leaves; then lay it in a Pot, and make a strong Brine of Water, and Bay-salt: in the boiling scum it clean; being boiled, and cold, put it to the Samphire; cover it, and keep it for all the Year; and when there is Occasion to use it, take and boil it in fair Water, but the Water must boil before you put it in; when it is boiled and become green, let it cool; then take it out, and put it into a wide-mouth'd Glass, and put strong Wine-vinegar to it, and keep it close for Use.

To pickle Lemon and Orange-Peel.

Boil them in Vinegar and Sugar, and put them into the fame Pickle: Observe to cut them in small long Thongs, the Length of half the Peel of your Lemon: It ought to be boiled in Water tesore it is boiled in Vinegar and Sugar.

To preferve green Apricots.

Take them when they are small and tender; peel them and put them in hot Water, but let them not boil; let them lie there till they begin to be green; then take them out and put them in cold Water, then boil your Sugar, and let your Apricots run a little of the Water from them, then

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put them into the Sugar, and let them boil 'till the Syrup becomes thick; then put them into an earthen Pan, and let them remain there a Week; then put them into a preferving Pan, and make them boil again till the Syrup grows thick; then put them once more into an earthen Pan, and let them stand 'till they are cold; then take them out of their Syrup, and lay them on your Ardoise; then dry them in your Stove, and turn them often till dry; then put them in Boxes on Paper.

To preserve Fruit green.

Take Pippins, Apricots, Pears, Plumbs, or Peaches, when they are green; scald them in hot Water, and peel them; then put them into another Water, not so hot as the first; then boil them very tender, and take the Weight of them in Sugar, and add to them as much Water as will make a Syrup to cover them; then boil them somewhat leisurely and take them up; then boil the Syrup 'till it be somewhat thick, and, when cold, put them together.

To preferve Rasberries.

Take good Rasberries that are not too ripe, but very whole; take away the Stalks, and put them into a slatbottom'd earthen Pan; boil Sugar, and pour it over your Rasberries, then let them stand to be cool, and when they are cold, pour them softly into your preserving Pan, and let them boil 'till their Syrup be boiled pretty thick; scum them very well in the boiling; this done, put them in Pots, and, when cold, cover them up close for Use.

To preferve Barberries.

Take one Pound of Barberries picked from the Stalks, put them into a Pottle Pot, and set it in a Brass Pot sull of hot Water, and, when they be stewed, strain them, and put to the Barberries one Pound 1 of Sugar, and to them put a Pint of red Rose Water, and boil them a little; then take half a Pound of the fairest Clusters of Barberries you can get, and dip them in the Syrup while it is boiling; then take the Barberries out, and boil the Syrup 'till it is thick and, when cold, put them in Glasses with the Syrup.

To preferve Currants.

Lay a Layer of Currants, and then a Layer of Sugar, and fo boil them as before prescribed for Rasberries; scum them in boiling, till the Syrup is pretty thick; then take them off, and, when they are cold, put them in Gallipots or Glasses closely stopped.

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To preserve Walnuts green.

Boil the Walnuts till the Water taftes bitter, then take them off, and put them into cold Water; peel off the Bark and weigh as much Sugar as they weigh, and a little more Water then will wet the Sugar; fet them on the Fire, and when they boil up take them off, and let them fland two Days, and then boil them again.

To preferve Cherries.

First take some of the worst Cherries, and boil them in fair Water, and, when the Liquor is well coloured, ftrain it then take some of the best Cherries, with their Weight in beaten Sugar; then lay one Layer of Sugar, and another of Cherries, 'till all are laid in the preferving Pan; then pour a little Liquor of the worst Cherries into it, and boil the Cherries 'sill they are well coloured; then take them up and boil the Syrup 'till they will button on the Side of Plate, and, when they are cold, put them up in a Glass close covered for Use.

To candy Cherries.

Take Cherries before they be full ripe, and take out the Stones; then take clarified Sugar boiled to a Height, and pour it on them.

To candy Pears, Plumbs, Apricots, &c.

Take them, and give every one a Cut half through; then cast Sugar on them, and bake them in an Oven, as hot as for Manchet, close stopped; let them stand half an Hour, then lay them one by one upon Glass Plates to dry, and they will appear very fine and clear: In this manner you may candy any other Fruit.

To candy Flowers.

Pick them very clean, and to every Ounce of Flowers put two Ounces of hard Sugar, and one Ounce of Sugarcandy, and dissolve them in Rose-water; then boil them, till they come to Sugar again, and, when it is almost cold, put in your Flowers, and stir them together, &c.

Of the making fundry Sorts of English Wines.

Currant-Wine.

CK the Currants (when they are full ripe) clean from the Stalks, then put them into an earthen Vessel, and pour on them fair and clean hot Water, that is, a Quart of Water to a Gallon of Currants; then bruise or mash them together, and let them stand and ferment; then cover them

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Dry Bread,

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for twelve Hours, strain them through fine Linen into a large earthen Crock (as they fay in Suffex) and then put the Liquor into a Cask; and thereto put a little Ale-yest, and, when worked and fettled, bottle it off: This is exceeding pleasant, and very wholesome for cooling the Blood; in a Week's Time it will be fit for bottling.

Artificial Claret.

Take fix Gallons of Water, two Gallons of the best Cider, and thereto put eight Pounds of the best Malaga Raifins bruised; let them stand close covered in a warm Place for two Weeks, stirring them every two Days well together; then press out the Liquor into a Vessel again, and add to it a Quart of the Juice of Barberries, and a Pint of the Juice of the Bramble-berries, or Rasberries (which perhaps is the best) to which put a Pint of the Juice of Black-Cherries: work it up with Mustard-seed covered with Bread-Paste for three or four Days by the Fire-side; after which let it stand a Week, then bottle it off, and it will become near as good as, if not exceed, common Claret.

Goofberry-Wine. The best Way is to take to every three Pounds of Fruit. one Pound of Sugar, and a Quart of fair Water; boil the Water very well; but you must put the aforesaid Quantity of Sugar when it is boiled; bruife the Fruit, and fleep it twenty-four Hours in the Water; stir it sometimes, then firain it off, and put the Sugar to it, and let it stand in a Runlet close stopped for a Fortnight; then draw it off, and fet it up in a cool Cellar, and in two Months it will be fit

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Rafberry-Wine.

Take the Rasberries clear from the Stalks; to a Gallon of which put a Bottle of white Wine, and let them infuf in an earthen Vessel two or three Days close covered, ther bruise the Berries in the Wine, and strain thro' fine Lines gently, then let it simmer over a moderate Fire; scum of the Froth, and then strain it again, and with a Quarter of a Pound of Loaf Sugar, to a Gallon, let it fettle; then it half a Pint of white Wine boil about an Ounce of well scented Cinnamon, and a little Mace, and put the Win strained from the Spice into it, and bottle it up.

Damson-Wine.

Dry the Damsons in an Oven after you have drawn you Bread, then to every Quart of Damsons put three Quarts of

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fair Water, but first boil it very well; then put the Water and Damsons into a Runlet with Sugar; and having stood a Time sufficient, bottle it off.

Wine of Grapes.

When they are fully ripe, in a dry Day, pick off those Grapes that are ripeft, and squeeze them in a Fatt or Pres made for that Purpose, in which must be a fine Canvas Bag to contain the Grapes; and when in the Press, do not squeeze them so hard as to break the Stones if you can help it, because the bruised Stones will give the Wine a disagreeable Tafte: Then strain it well, and let it settle on the Lees, in fuch a Cafk or Vessel as you may draw it off without raising the Bottom; then feason a Cask well with some scalding Water, and dry it or scent it with a Linen Rag dipped in Brimstone, by fixing it at the Bouge, by the Bung or Cork: then put the Wine into it, and stop it close for 48 Hours! then give it Vent at the Bouge, with a Hole made with a Gimblet; in which put a Peg or Faucet, that may eafily be moved with the Fingers; then in about two Days Time close it up; and in about two or three Months Time it will he fit for drinking, and prove almost as good as French Wine.

Wine of Strawberries or Rasberries.

Mash the Berries, and put them into a Linen Bag, as abovesaid for the Grapes, and squeeze them into a Cask, and then let it work, as aforesaid in the Grape Receipt, &c. In this manner may Cherry-wine be made; but then you must break the Stones, contrary to what was said before concerning the Grapes.

A Short Way for Cherry-Wine.

Squeeze the Juice of Cherries into a Case, and thereto put a small Quantity of Sugar corresponding to the Quantity of Juice; and, when stood a Month, it will be a pleafant Liquor.

Black-Cherry Wine.

In the same manner, take a Gallon, or more, of the Juice of Black-Cherries, and keep it in a Vessel close stopped 'till it works; and after it is fine, add an Ounce of Sugar to each Quart, and a Pint of white Wine.

To make Cider.

Grind, stamp, or pound your Apples, and put them into Press, and squeeze them through Hair Bags into a Tub; and let it settle, and according to your Quantity of Juice, put

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put in some Sugar at Discretion; then work it up with Ale-Yest, and let it stand a Week; then prepare your Vessels according to the Quantity, clean and dry; then put it up; after which, put into a Bag two Pounds of stoned Raisins, two Ounces of whole Ginger, and two Ounces of Ising-glass, and see it tied tight with a strong String fixed without-side the Barrel, that the Bag may sink to the Bottom; and after two Months it will be fit for Use.

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Mead.

Take fix Gallons of Water, and thereto put fix Quarts of Honey, stirring it 'till the Honey be thoroughly mixed; then set it over the Fire, and, when ready to boil, scum it very well: then put to it one Quarter of an Ounce of Mace, and as much Ginger, and half an Ounce of Nutmegs, some Sweet-marjoram, Thyme, Sweet-briar, together a Handful; then boil them in the Liquid, then let it stand by 'till cold, and then barrel it up for Use.

Of Fellies.

Let them be of Apples, Currants, Rasberries, &c. Take out the clear Liquor (when squeezed) and boil it with Sugar hill it is as thick as a Jelly; then put it up in Glasses.

# Family Medicines.

Almonds of the Ears fallen down.

Take a little Bole Armoniac in Powder, and with it mixfome Venice Turpentine, and spread it on Sheeps Leather as broad as a Stay, and apply it under the Throat, from Ear to Ear.

Ague.

Drink the Decoction (that is, the boiling of any Herb) of Camomile, and sweeten it with Treacle; which drink when warm in Bed, and sweat two Hours. Or to the Wrists apply a Mixture of Rue, Mustard, and Chimney-soot, by way of Plaster.

Afibma, or Shortness of Breath,

Take a Quart of Aqua Vitæ, one Ounce of Annifeed bruised, one Ounce of Liquorice sliced, half a Pound of stoned Raisins, and let them steep 10 Days in the abovementioned; then pour it off into a Bottle, with two Spoorfuls of sine Sugar, and stop it very close.

SP.

St. Anthony's Fire.

Take a Purge; and anoint the Place with the Marrow of Mutton.

Bruife or Scald Outward.

Take a Quart of Neats-foot Oil, half a Pound of Red Lead, two Ounces of Bees-wax: boil them together three Hours, and stir them well — Or, Oil of Eldern, bathed, or rubb'd on the Place, will have the same Essect.

Bruifes Inward.

Drink the Decoction of Comfrey with Bread and Butter.

Bound in the Body.

Take Cream of Tartar, mixed with Honey, very frequently.

Piles or Sores.

Eat Rosemary and Sage with Bread and Butter, and apply Wheat-flour and Honey by Way of Plaster.

Bloody Piles.

Take as much Linen-Cloth as will make a Suppository; being wrapp'd round Button-wise, wet it in the best Aqua Vitæ, or Aqua Composita; which, properly applied, will help them in two or three Applications. This is an approved and sure Medicine.

Bleeding at the Nofe.

Put into your Nostrils Coney-wool rolled in Bole Armoniac.

To purge the Blood.

Drink often of the Tea of Ground-Ivy, or of Saffafras Chips.

Canker in the Mouth.

Take the Juice of Plantain and Rose-Water mixed, and with it frequently wash your Mouth.

For a Cough.

When you are going to Bed, drink Brandy, Treacle, and Salad-Oil, mixed: Or, take a Mixture of Butter and brown Sugar.

Canvulsions in Children.

Take unslacked Lime one Quart, and to it put five Quarts of Spring-water; let it stand 24 Hours, in which Time still it three times, scum it, and take the clear Water, and let it stand 12 Hours more, and strain it through a Cloth and being put into an Earthen-pot, put to it Anniseeds and Fennel-Seeds, of each a Quarter of a Pound; Liquorice bruiled, and Sassafras, of each an Handful: Let them stand source

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five Days, and then let the Child drink a Quarter of a Pint, Morning and Evening as long as it lasteth.

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Take as much new Milk as a common Still will hold, to which put the Herbs following, viz. Hyssop, Cowslip-Leaves, Horehound, and Colts-soot, of each a Handful; and of Maidenhair one Ounce; let them stand all Night, then 'still them off; and when it is to be drank, sweeten it with Syrup of Cowslips, or good Sugar.

Golic.

Beat the Hips of wild Roses (gathered in Winter) into Powder, and half as much sliced Nutmeg; mix them, and take some in all your Drink: This is an excellent Remedy.

To cure Drought in an Ague.

Take a small Quantity of Burridge, Sorrel, Violet Leaves, and Strawberry Leaves; seethe them in two Quarts of fair running Water 'till it consume to one Quart; then take Almonds and blanch them, and when beaten, put them to the said Water, and to it put a little Sugar, and drink it warm.

Dropfy.

Take Broom Ashes, and Mustard-seed steeped in a Pint of White-wine: of which drink often. Approved.

For a Sore Throat ..

Take Columbines and Cinquefoil, stamp them, and strains them into Milk, and drink it very warm.

For the Gripes.

Take a fliced Nutmeg in a Quartern of Brandy warmed over the Fire; to which put the beaten Yolk of an Egg, with a little Water or Sugar; stir them together over the Fire to thicken a little: Take it at Night going to Bed.

For the Stone, or Stoppage of Urine.

Take a Quantity of Thyme, Parsley, Tops of Fennel, and Cinquefoil a little Quantity, five or fix Cloves of Garlick; stamp them all together, and strain them into White-wine or Ale, and drink of it Morning and Evening.

To cause an Appetite.

Seethe Centaury in fair Water, and drink it in a Morning fasting, to the Quantity of nine Spoonfuls, lukewarm, for three Days.

An eafy and fafe Purge.

Take Cream of Tartar one Ounce; Jalop and Brimfone of each a Quarter of an Ounce: The Jalop must first be beaten into fine Powder; and mix them thoroughly together in a Mortar; but if the Person be hard to work on put two Drams of Jalop more.

Small-Pox.

When warm in Bed, drink mulled Ale with Marygold. Flowers, and sweat a little to bring them thoroughly out; and to keep them from finking, take Brimstone and Treacle.

For the Itch.

Take Frankincense and beat it small, and mingle it with Oil of Bays and therewith anoint all over.

For a Burn or Scald.

Take Oil of Eldern, and anoint the Place: This is a fare Remedy.

Against the Fewer.

Take a Handful of Bay Leaves, and a large Handful of red Sage; seethe them in two Quarts of Ale, 'till they come to one, and let the Patient (being in Bed) drink thereof good Draught warmed, with a little Sugar.

To make an approved Ointment for old Aches, &c.

Stamp Smallage, and add to it some Aqua Vitze, and Boar's Greafe; fir them well together, and anoint the Place before the Fire, Evening and Morning.

To make Mellilot, excellent for Plaster.

Take Melilot, Pimpernel, and Scabious, of each two Handfuls; cut them small, then beat them in a Morter with two Pounds of Hog's Lard, let it stand in the Sunthine seven or eight Days, (it being usually made in June) then melt and firain it well; then add as many more fresh Herbs, and fet it in the Sun as before, and then melt and brain it again; then boil it 'till the Juice is confumed; then take it off the Fire, and put to it beaten Rosin, Bees-wax, and Venice Turpentine, of each one Ounce; when cold put it up in Pots, or make it up in Rolls.

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A Monthly Lift of all the Fairs in England and Wales. In which all the moveable Fairs are fixed to their certain Days.

TANUARY 1. Charlbury. 5. Redbourn. 8. Preston. 10. Caw-ston, Dronfield, Sleaford. 11. Howden, Salisb. 12. Llando-10. Cawvery. 14. Lanvenog, Nottingh. 15. Pontefract. 17. Buckingh. Tavistock. 18. Banwell, Grampound, Melton-Mowb. Potton, Teignmouth. 20. Banbury. 22. Banham. 24. Shefford. Bingley, Bodmyn, Briftol, Chesterfield, Churchingford, Kington, Leighton (Bedf.) Plymouth, Weasenham, Whittlesea (Isle of E.) 26. Adwalton, Knaresborough, Leek. 27. Rippon. 28. Llangollen.

February 1. Higham-Ferrers, Reading. 2. St. Blazey, Evenham, Farringdon, Lifton, Lyme, Lynn Mart, Poulton, Rudland, Saltash, Wymendham. 3. Bale, Bath, Bromley, Dereham, Ermington. 6. Llannnerchymeadd, Pontefract. 7. Cappel St. Silin, Howey. 8. Chirk, Egton, Hereford, Stamford. 9. Llandaff. 10. Chapelin le Firth, Beverley. 11. Leybourn, Llandysell. 12. Dorchetter. 14. Ashborne, Beaconsfield, Beaumaris, Biddeford, Biggleswade, Brandon, Budworth, Camrass, Cardigan, Devizes, Flint, Frampton, Godalming, Hambledon, Headon, Leominst. Looe, Maidst. Mold. Northallerton, Slaidburn, Tutbury. 17. Bridgnorth, Congleton, Stafford, Wokingham. 18. Long-Preston. 19. South-Moul-ton, Weldon. 21. Berkhamstead, Bingham, Coleshill (Staff. and Warw.) Lifkeard, Litchsie'd, Northampton, Thirsk. 22. Botley, Bury (Lanc.) Caegwrley, Danbury, Hartley-Row, Stone, Tregony. 23. Bildestone, Campden, Dunstable, Eton, Exeter, Falkingham, Royston, Tetbury, Tunbridge. 24. Banbury, Cambron, Eglwysfach, Frome, Henley (Oxon) Ireby, Pocklington, Stoke (Suff.) Teignmouth, Walshall. 25. Ashbrittle, Burnham (Bucks) Carnary, Derby, Feversham, Llanerillo, Llanfechell, Oundle, Plympton, Ruabon, Westbury. 26. Adwalton. 28. Abingdon, Chertsey,

Chesterfield, Winton.

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March 1. Aldeburgh, Bedf. Colyford, Seaton. 2. Balde Brackley, Liphook. 3. Ashburton, Bridgwater, Fincham. 2. Baldeck. Charlbury, Frampton, Graffington, Stockport. 5. Bolingey, Titchfield, Tregarron, Wantage, West-Look 7. Aberfraw, Blandford, Bourn, Buckingham, Burnley, Chipping-Norton, Corsham, Frampton, Higham-Ferrers, Hingham, Kirby-Stephen, Langport, Nottingh, Tewksb. Uppingham. 10. Norton, 11. Camelford, Llandegla, 12. Corwen, Langadock, Mydrim, South-Bourn, Sudbury, Talgarth (Yorksh.) 14. Bradford (Yorksh.) Llandewy, Northop, Poole, Seasord, Stamsord. 15. Bradford (Yorksh.) Burnham (Nors.) Oakham, Oswestry. 16. Bettus, Caeirwyth, Knaresborough. 17. Abbots-Bromley, Llangollen, Malmibury. 18. Llanufydd. 19. Heiffon, Market-Jew, Ruthin, Shrewib. 21. Cerne, Fazley, Mold, Narbeth, Philips-Norton, Salisb. Sedbergh, Stamford, Worksop. 22. Caftlecary, Howden Leominst, Oakhamp. Stone (Staff.) 23. Aylsham, Dolton, Retford, Skipton, Truro, Wrexham, Wooburn. 24. Bromyard, Clithero, St. Columb, Eccleshall, Keynsham, Rippon, Upton, Wye. 25. St. Alban's, Ash, Axbridge, Bishops-Lydeard, Carpbilly, Chagford, Churchingford, Earls-Colne, Grampond, Great-Chart, Henley (Warwicksh.) Huntingdon, Malpas, Midhurft, Newark, Oxbrough, Rudland, Stockport, Watlington, Wigton, Woodfock, Woodbridge.

Bridge. 26. Andover, Bodmyn, Feckenham, Hertf. Montgom. Namptwich, Odiham, Walden. 28. Grantham, Lifkeard, Loughborough, Magor, Patrington, Philips-Norton, Preston (Lanc.) Wifbeach (Isle E.) 29. Alcester, Chapelin le Firth, Llangerniew, Newn, Stourbridge, Wellington (Salop). 30. Market Drayton.

Newn, Stourbridge, Wellington (Salop). 30. Market Drayton. 31. Durham, Newbridge, Ottery, Settle, Yarm. April 1. Bishops-Castle, Reeth, Snaith, Stevenage. 2. Aberge-ly, Alnwick, Aylesbury, Helstone, Hitchin, Llanidloes, Lutter-worth, Malton, Newport (Shropsh.) Richmond, Shaftsbury, Skip-ton, Wisbeach (Isle E.) Worcest. 4. Ashborne, Belbroughton, Chesterf, Elham, Falkingham, Frettenham, Ledbury, Magor, Min. fter, Nefyn, Poole (Montgom.) Swindon, Ulpho. 5. Bangon, Blythburgh, Bootle, Bridport, Budworth, Burton, Cardigan, Clack, Colnbrook, Deal, Ditchling, Doncast. Elmham, Gloucest. Hail. sham, Ichwell, Kingsclear, Lamberhurst (Kent) Lavendon, Ludlow, Moreton, St. Peter's, Potton, Plympton, Somerton, South-wick, Tarring, Thirsk, Trecastle, Wadley near Farringdon, Wallingford, Wickwater. 6. Aberconway, Ivinghoe, Kington, Lianvylling, Newent, Uffculme. 7. Atherstone, Chapelin le Firth. Llandyfell, Malmsbury, Maffingham, Norwich, Nottingh. South-minster, Wareham, Wellington (Somersetsh.) 8. St. Austle, Droit-wich, Grinton-Hackfield, High-Budleigh, Winbourn Settle. 9. Burnley, Pontefract, Skipton. 11. Attleburgh, Bakewell, Barnard-Castle, Boxford, Cockerham, Darlington, Dilton-Marsh, Little-Driffield, Elham, Emsworth, Fringringhoe, Gresford, Guisburn, Halesowen, Hockham, Kegworth, Kelvedon, Kersey, Loddon, Manewden, Mitchell-Dean, Newcastle (Staff.) Olney, Romfey, Shefford, Sleaford, Thornbury, Warminster. 12. St. Asaph, Ashby de la Zouch, Basingstoke-Downs, Bedale, Blakeny, Brailes, Brede, Chipping, Cirencest. Clare, Cloeaynog, Colchest, Daventry, Dedham, Dorchest. (Oxon), Fordstreet, Frewenn, Gainsborough, Godmanchester, Jeventon, Milverton, Newport (Ess.) Pershore, Piddletown, Rochford, Sandbach, Scole, Scotto, Selby, Sidmouth, Skipton, Slaugham, Slinfold, Tamworth, Thame, Thorncomb, Totness, Toulsham, Turner's-Hill, Windsor. 13. Ashill, Hartland, Heref. Holy-Cross, Leek, Otterton, Redbourn, Royston, Walton, Wellingborough, Witheridge. 14. Adwalton, Beccles, Catffreet, Cawston, Cheltenham, Cricklade, Dronfield, Kettering, Stamfordham, Whitney. 15. Barnstable, Beaulieu, Derby, Northamp. Rothbury, Slaidburn, Tangley, Yarmouth (Norf.) 16. Biggleswade, Brackley, Yarm. (Norf.) Worcest. 18. Castle-Acre, Evesham, Llaneliom, Padstow. 19. Blockley, Elesmere, Fenny-Strats. Skipton. 20. Downton, Northleach, Llandovery, Shrewsb. Stoney-Stratf. 21. Bedf. Chesham, Sampford-Peverell. 22. Alkchurch, Bury (Lanc.) Newport-Pagnell, Pontypool, Settle. 23. Great-Bedwin, Bilsden, Bisley, Campden, Chichest. Cowbridge, Finchamstead, Gravesend, Hatfield, Holywell, Iron-Acton, Modbury, Norlease, Sawbridgeworth, Staraway, Whitchurch (Hant). 25. Ashover, Axminst. Brachnell, Burnham (Ess.) Crowborough, Graffington, Guisborn, Holt (Norf.) Iron-Acton, King's-Norton, Lannerchymeadd, Limpsham, Llandegla, Llanrwst, Loughborough, Luton, Maiden-Bradley, Methwould, Montacute, Great-Oakley, Orleton, Pocklington, Southamp. Stogumber, Teddington, Wark-

worth, Tamw Driudio walton pelin le May Cleobu Cullum Hafelm Pethert hant, S Haddon Barton-Colnbro ton, Po ley, Bo Chefterf field, I Duffield Torring 5. Caxt terden. ingham, ton, Co. Halftead Lifs, Lla Pensford Hamden 7. Talyl Haward Bosworth town, C II. Afkı Staines, Andover wood, C shot, Ew born, La tingtons ton, Ma Penybert Stanstead cestersh.) ford, Wa 13. Black well, Lec bridge, 1

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Stretton-Vckfield, worth, Wigmore. 26. Caerwith, Ovingham, Settle, Somerton, Tamworth, Tenbury. 27. Abberford, Burrowbridge, Cersigy-Driudion, Dorstone, Downham, Holfworthy, Spalding. 28. Adwalton, Soham. 29. Churchinford, Newchurch, Reeth. 30. Cha-

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May 2. Little-Brickhill, Burnham (Bucks) Castlecary, Charing, Cleobury Mortimer, Cockermouth, Collyton, Coventry, Crowcomb, Cullumpton, Derby, Fowey, Gifbrough, Greenstreet, Harwich, Haselmere, Hope, Lancast. Lantissent, Laxield, Lowestoff, North-Petherton, Oldham, Penryn, Reading, Redruth, Rufford, Shorehant, Stockport, Stogursey, Stonehouse, Tarperly, Totness, West-Haddon, Wingham, Wirkworth, Wittersham. 3. Aldeburgh, Barton-Underwood, Broadclift, Bromyard, Castle-Hedingham, Chard, Colnbrook, Hambledon, Heitfbury, Higham-Ferrers, Highbickington, Poulton, Tidfwell, Tregony, Worftead. 4. Ampthill, Bewdley, Boston, Brecon, Callington, Castlecoembe, Chagford, Chedder, Chefterf. Earith, Elmstead, Frodsham, Gosp. Guilf. Harling, Henfield, Hodnett, Ipsw. Lidney, Northallerton, Northamp. North-Duffield, Nutley, Overton, Probus, Shapp, Tamworth, Tanby, Torrington, Wilton, Wooburn, Wooler, Wotton-Bas. Wrotham. 5. Caxton, Chorley, Llanrhiader, Pentraeth-Mon, Porloch, Tenterden. 6. Ambersbury, Bishops-Castle, Bourn, Brigstock, Buckingham, Calne, Caftle-Town, Chawley, Chipnam, Chipping-Norton, Coleshill (Staff. and Warw.) Dunmow, Dursley, Gwthrin, Halftead, Hunmanby, Kendall, Knaresborough, Knighton, Lewes, Liss, Llannerchymeadd, Macclesfield, Meer, Nantglyn, Oakham, Pensford, Pleasley, Risborough, Stallbridge, Settle, Stoke under Hamden, Tavistock, Treganatha, Uttoxeter, Wem, Wymondham. 7. Talybont. 9. Braintree, Crawley, Deheuidd, Dudley, Guifburn, Hawarden, Haffingden, Holdty, Horsebridge, Kighley, Markets Bosworth, Matlock, Padiham, Stamford, Tockington. 10. Allentown, Caerleon, Egton, Fring, Harold, Leigh E. Skipton, Solyhull, 11. Askrig, Crediton, Dewsbury, Dolegelly, Eglwysfach, Llanidlos, Staines, Worley-Common. 12. Adwalton, Alfrifton, Alnwick, Andover, Bagbor West, Barnsley, Brading, Burgh, Burwash, Cawood, Chelmsf. Coln, Congleton, Corfe-Castle, Crickhowell, Everthot, Ewell, Falkingham, Haverford-West, Haverhill, Herts. Lamborn, Lanufydd, Lavichangel, Ledbury, Leicester, Leighton (Huntingtonsh.) Linfield, Lingfield, Litchs Little-Mountain, Lymington, Maidst. Milthorp, Mold, Pains Castle, Pembridge, Pentre, Penybert, Rippon, Rowland's Caftle, Sherstone, Silfoe, Smith, Stanstead, St. Stephen's Stoke (Suff.) Storrington, Stow (Glouceftersh.) Stroud, Sturminst. Swaffham, Treschiw, Touchest. Tuxford, Wadebridge, Warwick, Wendover, Wenlock, Wivilfcomber 13. Blackheath, Brent, Burnley, Darley-Flash, Haverhill, Lansawell, Leominster, Leyborn, Oswestry, Pwllhely, Rippon, Suckle-bridge, Waltham H. 14. Abergavenny, Arundel, Bala, Berkley, Brans-Burton, Bungy, Chelmsf. Chertsey, Denbigh, Elstow, Fairford, Goldanger, Guisburn, Haltwiftle, Hamstreet, Hartlepoole, Holloway, Newark, Nuneaton, Oakhamp. Pembroke, Pulham (Norf.) Ramsbury, Rochdale, Stafford, Strafford (Warwicksh.) Stretton-Church, Tattershall, Tewksbury, Thetf. Titchfield, Towyn Vckfield, Waltham-Abbey, Weighton, Winchelfea, Woolbridge

26. Benenden, Bettws, Caergwrley, Carnarvon, Chatham, Bre. dey, Guisburn, Inglewhile, Llanernigew, Machynleth, Overton. Roach, Winchcomb. 17. Ashford, Brentford, Bolney, Emergreen, Groombridge, Hay, Holbeach, Mattishall, North-Moulton, New. ton (Lanc.) Penrice, Rudham, Somerton. 18, Abergely, Alcefter. Brentford, Dorftone, Handford, Kingsbrumpton, Leek, Llanfan, nan, Morpeth, Northleach, Westfield, Walfingham, Workington, 19. Attleburgh, Banbury, Bawtry, Beaconsfield, Beaumaris, Bee. cles, Beverley, Bildestone, Bishop Aukland, Blyth, Bottishall, Ba. vey-Tracey, Bow (Devon.) Brentford, Bridgend, Bridgent, Brief. theimstone, Bures, Burton, Chapel-Cunnon, Cerne, Chapelin le Firth, Cheadle, Cheltenham, Dane-Hill, Devizes, Dicker, Eccle. shall, Ely, Eglwyswrw, Farnham, Finden, Framsden, Garstang, Grantham, Hal'aton, Hanflope, Hawkshead, Helmsley-Black-Moor. Hereford, Hundon, Kidderminster, Kilhampton, Kirbylonfdale, Langodock, Lifton, Linton, Lifkeard, Llanely, Mendlefham, Middlewich, St. Neot's, Newbury, Newp. (Monmouthfh.) Northwal. sham, St. Ofyth, Petworth, Rippon, Rofs, Saxmundham, Scarbor. Shefford, Southwich, Stelling, Stockbridge, Stone (Kent) Stortford. Stratton, Sumer-Court, Three-Lords, Trew, Ulverstone, Wellingto.. (Somerf.) Wem, Weobly, Wetherby, Wigan, Winflow, Wood. nesborough, Wrexham, Yarm, Yaxley. 20. Charbury, Rackham, Southminster, Stevenage, St. Udey, Wellow, Wickham. 21. Ash-Borne, Blackburn, Culmstock, East-Church, Hatherleigh, Lamber. hurst (Sussex) Sellinge, Sherborne, Sputty, Trecastle, Wainsteet, Weldon, White-Smith. 23. Abbots-Bromley, Albrighton, Appleshaw, Brastead, Bridlington, Bromhall, Criecieth, Dorking, Dunstable, Fletching, Grays, Guestling, Hallaton, Hindon, Hormam, Llandwnog, Maenclochog, Preston (Kent) Ruabon, Sodbury, Spilsby, Swindon, Thorpe, Wisbeach (Isle E.) Witham, Wragby. 24. Belford, Corwen, Huddersfield, Kidwely, Llanvylling, Louth, Mark, Marshfield, Teffinivg, Woods-Cornor. 25. Abberford, Bodmyn, Cuckfield, Market-Deeping, Newent, Sandhurft, Shrewsb. Spaldick. 26. Alfton, Aftwick, Brough, Camelford, Donnington, Kirkofwald, Malmsbury. 27. Chipping Norton, Horsted Kaynes, Pett, Ruthyn, Thaxtead. 28. Appleby, Booth, St. German's, Malton, Nefyn, Newport (Salop) Norwich, Skipton, Stagshawbank, Wisbeach (Isle E.) 30. Ackhole, Amersham, Appleby, Ardingley, Bakewell, Battle, Berkbempstead, Biggleswade, Billingshurst, Binegar, Blackburton, Braughing, Brixworth, Bromyard, New-Buckenham, Bury, Cartmell, Chicheft. Coltifhall, Cranbrook, Cromer, Crowle, Darlington, Little Dean, Little-Driffield, Dunster, Etham, Evesham, Exeter, Eye, Framlingham, Hadleigh, Ham near Richm. Harlow, Hawes, Helstone, Hempnall, Hitchin, St. Ives (Hunt.) Kington, Landaff, Launceston, Lawhaden, Llanymyneck, Manchest. Marsh in the Isle of Ely, Maysield, Newcast. (Staff.) Newport (Hants) Drmskirk, Oundle. Portbury, Rochest. Rosley-Hill, and every Fortoight after, till Sept. 29, at ditto, Rothbury, Rotherham, Ruifton, Salisb. Sittingbourn, Sleaford, Southwell, Spiliby, Stoke (Suff.) Farling, Toller-Down, Turksey, Wallingham, Wandsworth, Warop, Wellington (Suff.) Wells, Westbury, (Wilts.) West-Hoathley, Whitchurch (Salop) Whitdown, York, 31, Alford, Ashby de la

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June 1. Ambleside, Barnard-Castle, Basingstoke, Caister, Kirby, moor-fide, Lampeter, Leek, Lenton near Nottingham, Llandibea, Ludlow, Maidenhead, Minehead, Newick, Redbourn, Royston, Steple, South-Harting, Truro, Wandsworth, Wellingborough. 2. Adwalton. Alphington, Ashburton, Askrig, St. Auitle, Birmingh. Bow (Midd.) Buckingh. Dinasmonddy, Henley (Oxon) Kingston, Langtown, Latchington, Newport (Monm.) Odell, Upton, West-Cowes. 3. Bow (Midd.) Carmarthen, Chepstow, Derby, Hurst-Green, Kingston, Mersham, Ryegate. 4. Balcomb, Booth, Kingst. Kirkham Y. Moreton-Hamstead, Narbeth, Norwich, Stokesly, Stowbridge. 6. Althorne, Bojam, Bradford, Burnham S. Southo Cave, Dalton, Daventry, Dorchester, Gillingham, Great Tey, Hampton, Heunslow, Lenham, Mcsingham, Milbourn-Port, Oftend, Pembroke, Pontypool, Poole (Montgom.) Rayleigh, Rowell, Rudgley, Rudgwick, Seale, Southamp. Southwould, Sutton, Tod-dington, Usk, Watford, Williton, Windsor. 7. Abergavenny, Helywell, Montgom, Sheffield, Somerton, Sutton H. Swineshead, Watford, Weeton. 8. Aberfraw, Raven-Glass. 9. Caeirwhyth, Carphilly, Chapelin le Firth, Chirk, Christ-Church, Harlech, Kidderminster, Kilkhampton, Lannerchymeadd, Neath, Penzance, Steyning, Stortford, Thorpe near Egham, Weobly. 10. Berw. Coventry, Ingham, Pentraethmon, Testinivg. 11. Ambersbury, Axbr. Brandon, Chipman, Chudleigh, Gaywood, Grampond, Lantwitt, Liphook, Menchinot, Newnham (Glouc.) Overton, Stanford, Stanton, Stratf. Tolesham-Darey, Wokingham. 13. Banbury, Barton (Linc.) Belton L. Bines-Green, Clunn, Darlingt. Devi-2es, Hallaton, Haverford West, St. Neot's, Prescot, Ross, Whittlelea (Isle E.) 14. Aylesb. Hailsham. 15. Brampton, Manningtree, South-Moulton, Ramsey. 16, Falkingh. Frogatheath, Polflead, Wrexham. 17. St. Alban's, Bradfield, Grimsby, Taunton, Thorne. 18. Chepstow, Rothersfield, Stockland. 20. Abingd. Coleford, Howey, Maidst. Stamf. Whitchurch (Hants). 21. Aldeburgh, Bishop-Auckland, Landilos, Llanwrst, Newbrough, Tiverton, Worksop. 22. Appledore, Bardfield, Bettws, Bletchingley, Brampton, Broadwater, Burroughbridge, Cross-in-Hand, Halesowen, Hatherleigh, Havant, Holt (Denb.) Horncastle, Lambert-Castle, Ledbury, Maccless. Newburgh, Newcast. (Caerm.) New-Port-Pagnell, Selby, Shipstone, Tewksb. Wadebridge, Wellington (Salop). 23. Llandegla. 24. Alconbury, Arlesford, Barnet, Bentham, Boughton, Bradwell, Bridgwater, Bromsgrove, Cambridge, Canewden, Colchest. Debenham, Farnham, Flint, Fransield, Glemsford, Hadleigh, Halifax, Kirkham (Lancash.) Leighton (Yorksh.) Meor-

Moor-Kirk, Much Hadham, Newn, Newton Abbot, Oroid Preisteign, Rumford, Shaftsb. Silverton, Sodbury, Wallingford Wells, Witheridge, 25. Bangor, Barnet, Canvey-Island, Forrest, Row, Malham. 27. Builth, Catstreet, Machynleth, Newport (Pembrokesh.) Pershore, Sarnfolldryn, Wigan. 28. Bolton (Yorksh.) Bradford (Yorksh.) Folkstone, Hadstock, Harrold, Higham Fer-rers, Huntington, Llanvylling, Standish, Yeovil. 29. Axmink. Bale, Bath, Beccles, Bennington, Brackley, Bradford (Yorksh.) Buckfastleigh, Buntingsord, Cambron, Cardiffe, Great Clackton, Fareham, Grassington, Hartley-Row, Hitton, Hodsdon, Hock-Norton, Hunspill, Landrake, Langport, Lingsield, Llangerniew, Loftwithell, Mansfield, Newnham (Kent) Okehampton. Olney, Red-Lynch, Reepham, Rhydyllafrdy, Spalding, Stafford, Standish, Stebbing, Tolesbury, Tring, Wadhurst, Watton, Wem, Winterburn, Witney. 30. Bradford (Yorksh.) Bridgnorth, Buxslead, Harburn, Witney.

lech, Thwaite.

July 1, Criccieth, Drufllwyn, Haslingden, Hereford, Newen, den, Penshurst, Thorney (Isle E.) 2. Ivelchester, Richmond, Teltinivg, Toller-Down, Walton (Eff.) Wickwater, Ystradmirik. 4 Broughton-H. Chesters. Dolegelly, Falkingham, Green-Poole M. Leek, Salop, Sidley, Sputty, Stagshawbank, Wakefield, White-smith. 5. Ashborne, Bedale, Bedford, Beverley, Bishops-Castle Brecon, Bryset, Burford, Chester, Chesterford, Church-Whitfield, Clayton, Congleton, Couthorpe, Croydon, Devizes, Dorchest, Easingwould, Eyminge, Gloucest. Harlestone, Harriotsham, Hazey Hertf. Kennington, Lancast. Launceston, Leicest. Lincoln, Little bourn, Llanerillo, Messing-Potton, Narberth, Newbury, South-Petherton, Pevensey, Plint, Pontypcol, Probus, Ruiton, Torrington, Tunbridge, Ulpho, Underwood, Wainsteet, Wakesield, Wareham, Warwick, Wenlock, Winterton, Woodland. 6. Bedale, Kettlewell, Newcast. (Staff.) Royston. 7. Bovey-Tracy, Brentwood, Brumhill, Chapelin le Firth, Keninghall, Laycock, Northop, Painpill, Penryn, Taunton, Uppingham, Whitechurch (Hants) 8. Southwater. 9. Langadock, Machynleth, Uffculme. 11. Abbotsbury, Ashington, Bala, Blandford, Euckingh. Burnley, Car-marthen, Dulverton, Foulneys-Island, Frodingham, Godalming, Grantham, Hollington, Holsworthy, Hythe, Iver, Knotsford, Lampeter, Leeds, Leominster, Macclessield, Market-Bosworth, Marlborough, Mountforrel, Pembroke, Peterborough, Petersfield, St. Peter's, Portsmouth, Ringwood, Scotter, Sevenoaks, Southam, Stockbridge, Stoken-Church, Stowmarket, Sudbury, Talgarth, Tha verton, Upton, Wolverhampton, York. 12. Caeirwith, Howdon, 13. Congleton, East Grinstead, Neath, Swanzey, Wooburn. 14. Spilsby, Winteringham. 15. St. Asaph, Dronsield, Great Bedwin, Little-Hadham, Bury-Green, Prittlewell, Seamore, Stevenage, Twyford, Up-Holland. 16. Burton, Helmsley-Blackmoor, Milksham, Newmarket (Flint.) 18. Albrighton, Alburi Putmore-Heath, Ather Rone, Banwell, Bentley, Biddeford, Camelford, Chipping-Norton, Cirencester, Denbigh, Emsworth, Fenny Strats. Haverford-west, Horsham, Kirton, Llanidlos, Llanybiddar, Moreton-Hamstead Morpeth, Newcastle (Carmarthensh.) Overton, Patrington, Penrice, Sherborne, Stockton, Tenbury, Topcliff, Wantage, WarringtonFo. Bolt holt, Be Stanley, Garstan Cheshan Newton Alnwich Bromley by, Dur Harpley Lindsey, verton, Shorehai Torring ing, Wa mouth ( manden, Down, S port (Sa

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30. Bolton (Lanc.) Carphilly, Clay. 20. Alfreton, Barkway, Bergholt, Betley, Carleon, Helstone, Honiton, Kingsbridge, Leonard-Stanley, Rois, Tenby. 21. Beeding, Bromyard, Clithero, Corwen, Garstang, Swaffham. 22. Allington, Biggleswade, Billericay, Chesham, Dartford, Ely, Frome, Haworth, Kidwely, Monkton, Newton (Hants) Ramsey, Tetbury, Whitgift. 23. Colchester. 25. Alnwick, Alresford, Barnard Castle, Beckhamstead, Biliden, Bristol, Bromley, Campden, Castle-Acre, Chelwood, Little-Clackton, Derby, Dunwich, Earith, Epsom, Ewhurst, Fotheringhay, Giffing, Harpley, Hockhold, Ipswich, Llanrhiader, Leigh (Kent) Lidd, Lindley, Liverpool, Luggershal, Malpas, Middlewich, Milton, Milverton, North-Down, Pocklington, Poulton, Reading, Seaford, Shoreham, South-Reppo, Staple, Stone (Staffordsh.) Tiptery place, Torrington, Totness, Tregony, Trew, Trowbridge, Great-Waker-ing, Waltham (Hants.) Wigmore, Wisbech in the Isle of Ely, Yarmouth (Hants.) 26. Abbey-Milton, Clare, Hastings, Horsemanden, Kirby, Llaneliom, Landsawel, Leighton (Bedfordsh.) Post-Down, Sherborne, Tamworth. 27. Falmouth, Market Deeping, Newport (Salop). 28. Leek, Menchinot, Winchcomb. 29. Chailey, Matingley, Wevelsfield. 30. Chilmark, Hornby, Llamamon in Yale. August 1. Angmering, Barton (Hants) Bethersden, Brightlingsea, Brookland, Broughton (Lancash.) Burnham (Norf.) Chepstow, Corfle-heath, Cowbridge, Cowling, Exeter, Frampton, Henfield, Hoo, Lampetar, Landovery, Lantriffet, Lidford-green, Loughborough, St. Margaret, St. Margaret's near Marlborough, Newent, North-curry, Odiham, Ottley, Partney, Reddich, Slaidburn, St. German's, St. Neot's, St. Stephen's, Stogumber, Summerton, Thandiston or Francion, Uttoxeter, Uxbridge, Wisbech (Isle of Ely) Whitehaven. 2. Battlefield, Bridgnorth, Calne, Chulmley, Headon, Ickleton, Ivelchester, Keswick, Kingston, Kington, Langeridge, Long-Cromarsh, Magdalen-hill near Winton, Mold, Newark, Norwich, Stockbury, Stony-Stratf. Thetf. Wedmore, Wisbech, Yarm. 3. Daventry, Hitcham, Kingston. 4. Carnarvon, Earl-Soham, Esher, Higham Ferrers, Llandegla, Kingston, Thirsk. 5. Altring. ham, Ashton-under-Line, Audley-End, Bicester, Boscastle, Castle-Town, Chard, Cheltenham, Chertsey, Chichest. Doncast. Dorchest. (Dorfet.) Dudley, Eccleshall, Garner-street, Hatfield, Broad Oak, Hexham, Kirkofwald, Llanfechell, Langindairn. Northamp. Okehamp. Queenborough, Raven-Glass, Rhos-Fair, Saltash, Skipton, Stamford, Stavendell, Trapston, Thirsk, Wattlesbury, Westbury (Salop) Wetherto 6. Baldock, East-Ilsley, Goldsithnay, Holtwood, Linfield, Rhayadar, St. Ann's-Hill (Devizes). comb, Curry-Rival, Horning, Howey, Ruthin, Shepton Mallet, Shifnal, Stamford. 9. Llanrwft. 10. Allucchurch, Appleby, Afhburton, Deddington, Duffryn, Flint, Hawkhurst, Hurstperpoint, Landown, St. Lawrence, (Corn.) St. Lawrence (Kent) Leachlede, Membury, Newburgh, Priddy, Snaith, Thaxtead, Waltham St. Lawrence, Warminft. 11. Bofton, Duningworth and Snape. 12. Banbury, Bettws, Bridford, Caergwrley, Carmarthen, Christingham-Magna, Dunholme, Dunftable, Feversh. Green, Hay, Highworth, Hornsea, Linsield, Malling, Newcastle-upon-Tyne, Newton (Lanc.) Plympton, Sheepwash, Shrewsb. Sleaford, Stowmarket, Talybont, Treganatha,

Treganatha, Uffculme, York. 13. Bakewell. 15. Attlebunh Carphilly, Keynsham, Lelant, Liskeard, Llanufydd, Market-Weston. Newport (Mon.) Ofwestry, Ottery St. Harmon, St. Mary-Hill Stamfordham, Thornbury, Trecastle, Tutbury, Worcest. Yarling. ton. 16. Ashborne, Brig, Burgh, Louth, Pentraeth-Mon, Telsam. 17. Dallwood, Donnington, Knaresborough, Llanderfel, Llanfannan, Penystreet in Trawsfyndd, 18. Aberwingregin, Beddgelet, Chapelin le Firth, Clynnogfawr, Emfworth, Navenby, Rippon, Settle. 19. Clack, Pwilhely, Reath, Settle. 20. Abergely, Black. more, Chorley, Moorlingh, Penmoria, Settle, Weldon. 22. Arundel, Bedford, Cayo, Cheadle, Crediton, Farnham, Frodsham, Handford, Harlech, Hartlepoole, Horncastle, Hungersord, Kilgarren, Kilham, Llangollen, Ludlow, Martock, Melton-Mowbray, Mwrrs, Newburgh, Oundle, Romney, Rugby, Settle, Stroud, Teftinivg, Winflow, Wonford-Eagle. 23. Belford, Botley, Penmachno. 24. Abbot's Bromley, Ashby de la Zouch, Barnet, South-Benflet, Brachnell, Buckfastleigh, Chipping, Cranborne, St. Decumans, Eglwysfach, Kipmash, Lambert-Castle, Lee, Lostwithell, Meer, Newbury, Sallcot, Southwould, Wainfleet. 25. Barnet, Bingley, Coxwould, Elefmere, Haughley, Hermitage, Landrake, Lanfaivet, Nefyn, Partney, Ripley (Yorkih.) Watchet. 26. Bampton (Ox. fordsh.) Barnet, Bingley, Bleagon, Borth, Carlisle, Corby, East-Brent, Elsdon, Gisborough, Gourdhurst, Haverhill, Hermitage, Hinkley, Ilmister, Little-Driffield, Northampton, Porthaethwry, Preston (Lanc.) Rhos Fair, Ripley (Yorksh.) Romsey, Swanzey, Stroud, Tollerton. 27. Bingley, Cerigy, Druidion, Gisbrough, Umister, Rhayada, Ripley (Yorksh.) 29. Cawston, Gressford, Kilmington, Llanerillo, Morbath, Overton, Pampil, Philip's. Norton, Sampford Peverell, Tarperley. 30. Linton, Newn, Spald. ing. 21. Brampton, Lambert Castle, South-Moulton, Wicks. September 1. Alfton, Dronfield, Gillingham, Marnham, Ponte-

fract, Spittle, Tregony. 2. Hingham, Holywell, Kettlewell, Perkridge, Steeple Ashton, Snaith, Stevenage. 3. Llanidlos, Long-Presten, Treschiw, Wirksworth. 5. Aberconway, Beaulieu, Brighthelmst. Brigstock, Buckingh. Burnham (Essex) Burwash, Chipping-Norton, Chorley, Corsham, Crewkerne, Egdean, Egton, Firmingham, Frampton, Hatherleigh, Haverford-West, Horringer, Kidderminft. King's Norton, Kington, Lampeter, Leominster, Mareffield, Mcnmouth, Montgomery, Namptwich, Newcastle, Old-Chapel, Playden, Redruth, Road, Sidmouth, Silverton, Stallbridge, Stockwith, Tewksb. Toddington, Warbro' near Guilford, Warwick, Westham, Whittingham, Wivenhoe. 6. Baddlesmore, Camelford, Donnington, Market-Raifin, Ware. 7. Holy-Crofs, Kilmington, Newton-Abbot, Preston (Lancash.) Stowey. Tidswell, Wymondham. 8. Bishop's-Lydeard, Cardiff, Cardigan Denbury, Frittenden, Glastonbury, Ormskirk, Rudland, Stourbridge, Talfarn, Wymondham. 9. Ashford, Bishop's-Castle, Broadworthy, Caeirwyth, Carmarth. Epworth, Fordingbridge, Harlestone, Harlow, Helftone, Leachlade, Newent, Tavistock, Weston, Zoyland. so. Brecon, Dinasmonddy, Fowey, Newport (Salop) St. Mary-Cray. 12. Adversean, Brentf. Dundry, Foncett, Giles-Hill near Winton, Horsebridge-Common, Horsted-Kaynes, Neath, Oakhan,

Poole (1 ham, W Iron Act Goodnes Sumer-C ham, Gr Lutterwo Lee. Ma Wilming Beaminst Carlifle, mont, G Moor-fid ket-Dray Partney, Swindon, Week St. Wootton-Backwell, Chudleigh Ireby, K Padstow, ing, Shad Woodbr. Beddgeler 24. Bootle 26. Aber gay, Burf fington, Narberth, wry, Ran Spalding, ftinivg, T Wivilfcom Derstone, 28. Chesh

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Poole (Montgomsh.) Stogurfey. Tamworth, Tollerdown, Wareham, Wilton, Wimple. 13. Brentf. Dilton, Marsh, Holbeach, Iron Acton. 14. Ashill, Bassidon, Brentf. Congerbury, Frome, Goodnestone, Lincoln, Pickering, Richm. Ryegate, St. Udey, Sumer-Court, Wherwell, Wisbourn, Witham, Tr. Brentf. Durham, Grimsby, Mark, Sandbach, Upton. 16. Bettws, Freshford, Lutterworth, Tillingham, Woolpit. 17. Bellingham, Llanrwst, Lee, Masham, Northiam, Penrice, Probus, Wantage, Weldon, Wilmington. 19. Abingd. Amersham, Atherstone, Barnstaple, Beaminster, Beaumaris, Breewood, Buckland, St. Mary, Callington, Carlifle, Chatham, Clack, Cawley, Cuckfield, Eastmeon, Egre-mont, Gisbrough, Guisburn, Harbottle near Rothbury, Kirby-Moor-fide, Llandyfell, Little-Driffield, Machynleth, Maldon, Market-Drayton, Masham, Northamp. North-Bradley, Painswick, Partney, Shouldham, Silmi'ton, Staines, Steyning, Sturbich-Fair, Swindon, Uik, Uttoxeter, Waltham (Leicestersh.) Waterleigh, Week St. Mary, Westerham, Woodbury-Hill near Bere, Worcester, Wootton-Courtney, Wrexham. 20. Dolegelly, Gisbrough. Backwell, Basingstoke-Downs, Bridgw. Burnham (Bucks) Caerleun, Chudleigh, Clapham, Crediton, Cricklade, Everham, Hawkshead, lreby, Knighton, Liskeard, Lyme, Maiden-Bradley, Manchest. Padftow, Penmachno, Penystreet in Trawsfynydd, Plymouth, Reading, Shadbrook, Silfoe, Tendering, Thorney in the Isle of Ely. Woodbr. 22. Llannarth, Llemuwehlyn, Yarborro'-Castle. Beddgelert, Clynnogfawr. Derby, Saxmundh. Talgarth, Tuxford. 24. Bootle, Haverford-West, Langport, Pwllhely, Stretton-Church. 26. Abergavenny, Arundel, Aylesbury, Belton (Lincolnsh) Bungay, Bursord, Chesterfield, Clayton, Denbigh, Easingwould, Gras-sington, Groombridge, Hartland, Haselmere, Headon, Ipswich, Narberth, Newburgh, Padiham, Pembroke, Penmorsa, Porthaethwry, Ramsbury, Rhayader, Rockingham, Rotherstridge, Shroton, Spalding, St. Stephen's, Stratford, (Warwicksh.) Tattershall, Te-stinive, Tenbury, Thetf. Titchfield, Waltham-Abbey, Weighton, Wivilscombe, Wotton-Underedge, Wycomb. 27. Aylsham, Derby Derstone, St. Ninion near Fenton, Powder-Batch, Rogate, Sputty. 28. Chesham, Dereham, Gloucest. Llanrhiader, Ludlow, New-Bridge, Northleach, Stauford. 29. St. Albans, Alton, Ash, Blackobys, Canterb. Chagford, Cranbrook, Framlingh. Frewenn, Henley (0xf.) Hope, Horsebridge, Llangerniew, Llanymyneck, Lowestoff, Maidenhead, Marketjew, Meer, Smith, Southminst. Stoken-Church, Teingmouth, Tring, Wallings. Watton, Woodham-Ferris. Blackburn, Brough hill, Feckenham, Llanelly, New-Church, Ongar,

October 1. Brachnell, Brading, Bromsgrove, Culmstock, Dinasmenddy, Hawarden, Catharine-Hill, Ottley, Redruth. 2. Abersuilly, Appletrewick, Baldock, Beccles, Bolton Lanc.) Braintree,
Buckingh. Budworth, Builth, Burgh, Cerne, Coleshill (Stafford.)
Coleshill (Warwick.) Croydon, Daventry, Devizes, Downton, Dudky, Easbrey, Frodingham, Hambledon, Hemsley-Blackmoor, Hingham, Holsworthy, Lamborn, Howden, Ledbury, Lewes, Malling,
hayland, Northallerton, NorthTawton, Nottingh. Peterbor. Retasted, Rothbury Rudham Sherstone, Shrewsb. Stafford, Swinss-

head, Tarring, Warham, Wendover, Woodstock. 3. Corby, Hounslow, Nottingh. Pentraeth Mon, Sherborne, Worksop. Alnwick, Harrold, Macclesfield, Malham, Nottingh. Ubley, Walshall. 5. Axminster, Drusllwyn, Inglewhile, Lansadwin, Llane. liom, Llanvylling, Leighton (Huntingdonsh.) Rochf. Royston, Steple. 6. Bishop-Aukland, Blyth, Brackley, Cayo, Chapelin le Firth, Chertsey, Dewsbury, East-Hagburn, Gaywood, Market. Raisin, Porlock, Sherburn, Wooburn. 7. Billericay, Bury, Stockton. 8. Challeck, South Moulton. 10. Aberconway, Abergeny, Proceedings Brokers, Barrens, British Blockley, Brant British Brokers, British Br Barnsley, Basingstoke, Bedale, Birmingh. Blockley, Brent, Brid. port, Buckland, Carmarth. Charlbury, Chefter. Chicheft. Cocker. mouth, Corwen, Deal, Dolegelly, East-bourne, Falm. Fazley, Fenny-Stratf. Gosport, Great Thurlow, Hadleigh, Hartlepool, Haslingden, Hay, Higham-Ferrers, Hodnet, Hull, St. Ives (Hunt. ingdonsh.) Kegworth, Kettering, Kingsland, Lancaster, Lanvichangel, Lavenham, Leicest. Lenyher. Looe, Malton, Marden, Market-Deeping, Mathry, Milden-Hall, Milverton, Mitchel-Dean, Moreton, Newhaven (Suffex) Norton, Ower-Mayne, Penkridge, Pentree, Pontypool, Ross, Rushlag-Green, Sittingbourn, Selby, Sheepwash, Shefford, Shouldham, Sleaford, Smarden, Solyhull, South-Brent, Steyning, Stony-Stratf. Stortford, Stow (Lincolnfh.) Swindon, Tavist. Tewksb. Thame, Tiverton, Torrington, Ux-bridge, Wadebridge, Watlington, Wells, Weyhill, Withyam, Yarm. 11. Bedale, Bedf. Blackheath, Burnley, Coln, Kingsclear, Monkton, Salisbury, Sellinge, Shipstone, Wragby. 12. Caxton, Ditch-ling, Hitchin, Llandovery, Northop, Otterton, Seven oaks, Sucklebridge. 13. Banbury, Chapel-Cunnon, Epping, Lymington, Manti, Rackham, Rhos-Fair, Wigan, Windsor. 14. Haworth, Ley-bourn, Sarr, Trecastle, Waltham H. Wells. 15. Ashover, Car-17. Alcester, Alphington, St. Asaph, Bakewell, Ballbrough. ton, Christchurch, Cowling, Donnington, Havant, Ivinghoe, Knaresborough, Llanrhiad-Dyssin-Alwyd, Llemuwchllyn, Maidst. Navenby, Swinstead, Thorne, Turner's-Hill, Wellow, Wenlock, Wooller. 18. Barnet, Bellbroughton, Little-Brickhill, Charleton, Chipnam, Chisleborough, Cowbridge, Criccieth, Dorstone, Ever-sey, Farringdon, Halesworth, Harwich, Hatfield, Haverford-west, Henley (Warwickshire) Hindon, Kirkham (Lancash.) Lantrissent, St. Lawrence, Laxfield, Luton, Midherst, Newnham (Gloucestershire) Newton-Peppleford, Overton, Partney, Tidswell, Uphaven, Usk, Winterburn, Workington. 191 Abborford, Barnet, Cosse-Castle, Lamamon-in-Yale, Lampeter, Market-Harborough, Partney, Sawbridgeworth, Testinivg, Trevena, Whitchurch (Hants) roth, and the two following Saturdays at Swanzey. 20. Alphorne, Cerigy-Druidon, Chichest. Colchest. Devizes, Elham, Ely, Gainsborough, Heref. Kingsbrumpton, Rothersfield, Slaldburn, Tenby, 21. Blackburn, Bridlington, Concerdd, Rudgley. 22. Barking, Booth, Carline, Clithero, Newmarket F. Newport-Pagnell, Overten. 24. Aberfraw, Brampton (Devonsh.) Borth, Burrowbridge, Caffer, Closaynog, Dalton, Harling, Hastings, Llangenock, Landawel, Leighton (Bedfordsh.) Lenham, Market-Drayton, Marsh field, Matleck, Newn, Porthaethwry, Ripley (Derbysh.) Sputty Stow (Quoucestersh.) Sturminst. Tamworth, Upottery, Wainsto

Winton. hore, Q 26. Abb Aberguil Flash, D 28. Afht Chepitov Forest-R ham, Ne Harting, 29. Abbi Broadwa flead, Ha manby, I ham, Nev Thirfk, 7 Llanllech

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Winton. 25. Aberwingregin, Cartmell, Mortimer, Potton, Perhame, Queen-Camel, Stockport, Whittlefea in the Isle of Ely. 26. Abberford, Grantham, Llandegla, Llansannan, Ovingham. 27. Aberguilly, Bromyard, Caergwrley, Cleobury-Mortimer, Darley-Flash, Daventry, Marsh in the Isle of Ely, Nantglyn, Ulverstone. 28. Ashby de la Zouch, Askrig, Bangor, Biddenden, Biggleswade, Chepstow, Cullumpton, Diss, Droitwich, East-Dean, Edwinstone, Forest-Row, Llanidsos, Liston, Linsield, Milbourne, Port, Needham, Newbury, Newmarket (Suff.) Pocklington, Plympton, South-Harting, Thirsk, Totness, Warminst. Watton, Whitchurch (Salop). 29. Abbey-Holm, Ambleside, Askrig, Banbury, Bourn, Bridgnorth, Broadwater, Burton, Chagford, Charring, Chedder, Ewell, Halletad, Hampton, Henley (Oxf.) Holt (Denbighsh.) Howey, Hunmanby, Kidwely, King's-Cliff, Kirkby-Stephen, Marlow, Mongham, Newcast. (Northumb.) Pleasley, Radnor, Sedberg, Stainton, Thirsk, Towcest. Tunbridge, Wellingborough. 31. Crowcomb,

Llanllechyd, Newhaven (Derbysh.)

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November 1. Coventry, Earith, Fordstreet, Llanybiddar, Lyttiam, Newark, Prescott, Rothbury, Settle, Wadhurst, Walden, Wingham, 2. Altringham, Bletchingly, Buckland, Chard, Downam, Farnham, Helmfley-Black-moor, Hoxne, Loftwithell, Loughbrough, Toddington, Wilton, Wokingham, Wye. 3. Bromfield, Campden, Poole (Dorf.) Swaffham, Talgarth. 4. Eccleshall, Litch-5. Appleshaw, Llanfechell. 7. Barwick-Hill, Helmsleylackmoor, Horley, Lampeter, Manchest. Middleham-moor, Newun-Abbot, Newcast. (Stafford.) Newport (Monmouthsh.) Rochdale, utton (Hants) Talfarn, Trefrhiw, Tregory, Witchbury. 8. Aberonway, Alford, Barton-Underwood, Bingham, Blandf. Buckingh. hilham, Chipping-Norton, Cirencest. Dulverton, Dunmow, Haherleigh, Helstone, Herts. Hexham, Kendall, Kighley, Knotsord, Llamedy, Llanrhiader, Leeds, Leominst. Lidney, Massing-am, Pensford, Romsey, Stams. Stratton, Sutton, (Warwickshire) Warwick, Whiston, Woodstock. g. Albrighton. 10. St. Austle, acirwith, Chapelin le Firth, Falkingham, Porlock, Ruthin. Saburton, Brandon, Cambron, Langport, Lenton near Nottingh. iverpool, Macclest Newburgh, Nunny, Penrith, Pwilhely, Reeth. 2. Amlwch, Bifley, Blakeney, Brumpton, Callington, Camrass, helmsf. Chirly, Dunstable, Fairford, Halcheston, Kilgareen, Kilim, La winio, Lincoln, Little-Mountain, North-Mou'to, Penorfa, Pentraeth Mon, Rowland's-Castle, Stelling, Stoney-Strats. hree-Lords, Wakefield, Wooburn. 14. Allentown, Amberthury, ddeford, Bishop's-Castle, Carmarth. Dinasmonddy, Elesmere, sthorough, Huntingd. Kingst. Llanerillo, Leek, Loddon, Mayeld, Montgomery, Porthaethwry, Testinivg, Trecastle, Wakes. 15. Egton, Ottley. 16. Andover, Beverley, otten-Baffet. Me (Montgomeryshire) 17. Brecon, Bridgend, St. Columb, diord, St. Leonard's (Suffex) Malling, Newp, Otterford, War-Willington, Wells, Yeovil. 18. Cuckfield, Dorstone. 19.
Lis-in-Hand, Truro. 21. Aberwingregin, Conwydd, DolFeltwell, Llanufydd, Llanybiddar, Petworth, Ruabon,
pten. 22. Battle. Bawtry, Boscastle, Bow (Devon) Brig-

flock, Clunn, Crowle, Darlington, Deddington, Dolegelly, Do Fairbach, Falkingham, Fillingham, Guilf. Haltwittle, Hempton, 1 gollen, Lawhaden, Marlb. Martin's-Town, Mold, Monm. Buckenham, Newcast. (Carmarthensh.) Pembridge, Rippon, by, Scarborough, Shaftsb. Shifnal, Skipton, Stamford-Bri Standish, Storrington, Warkworth, Wem, Wetherby, York, every other Thursday in the Year, at York. 23. Witney. Coleford, Eglwysfach, Holt (Norfolk) Langtown, Penzance. Chefterfield, Chipping-Norton, Elftow, Frome, Gravefend, M. chynleth, Thwaite. 26. Castle-Town, St. Ive's, Landover 28. Bakewell, Eglwyfwrw, Fe Llanfechell, Little-Dean. Stratf. Gloucest. Gorsynon, Harlow, Hartlepool, Hook No Horsham, Northamp. Shemeld, Spaldick. 29. Ashborne, B field, Llangerniew. 30. Alfrifton, Belchamp, St. Paul's, Bro hembury, Bromhall, Buntingford, Cardiff, Chipnam, Colyton, Co fey, Flint, Fring, Hemphall, Llanfannan, Maidenhead, Moreto Hampitead, Northwould, Presteign, Warrington, Wells, We St. Mary.

December 1. Hythe, Ingateffone, Penrice, Rotherham, Tuthun 2. Sputty. 3. Ashton-under-Line. Bettws, Garstang, Louis Talgarth. 5. Atherstone, Carnary. Dursley, Gressford, Lambon Newark, Penybout, Pluckley, Sandw. Staff. Tenby, Wenloc 6. Bodmyn, Builth, Cornhill, Cranborne, Exeter, Greffinghall, Lau ceft. St. Nicholas, Northwich, Sidland, Stoke (Norf.) Tocking Toddington. 7. Cerrigy-Druidion, Clithero. 8. Llanelion, Lei Ludlow, Malpas. 9. Barnfraple, Bradfield, Leybourn, 10. B 'ay, Bolney, Lanon, Lifkeard, Newmarket Fl. Newport ( South-Moulton. 12. Aberfraw, Abingd. Ampthill, Saldock, B Bewdley, Bolney, Boston, Brackley, Chagford, Chawley, Colon Colingburn-Duges, East-Grimst. Gargrave, Gringley, Harles Kimbolton, Kirton, Langadock, Lanport, Llanrwit, Narbeth, O westry, Peterss. Ringwood, Rochest. Ross, Shrewsbury, Stratto Tavistock. 13. Bedale, Knaresb. 14. Thirsk, Trecastle. Kettering, Namptwich. 16. Comb St. Nicholas, Dolegelly, New 17. Arundel, Grantham, Helftone, Higham-Ferrers, Horn Neot's, North-Tawton, Spalding, Wallingford, Woods. Beaumaris, Bedf. Cardigan, Ledbury, Northamp. Pains-Cafe Thornbury, Truro, Wotton-Baffet. 20. Bradf. (Yorksh.) & Boxford, Bradford (Yorksh.) Droitwich, Grinton, Haward Highbickinton, Kirkby-Londfdale, Laycock, Penryn. 23. 4 ford (Yorksh.) Carphilly, Newport-Pagnell. 24. Alnwith, warden, Llanwnen. 26. St. Afaph, Beckley, Corwen. 28.0 Hill, 29. Bridgwater, Stonehouse. 30. Milbourn.

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